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VOL. XXXIII

FEBRUARY, 1924

No. 2

Clement G. Amory, Treasurer of the Consolidated Shipbuilding Corporation, who has just opened their Miami office

C. G. Amory Opens Southern Office in Miami

FOLLOWING the practice established a number of years ago, the Southern office of the Consolidated Shipbuilding Corporation of Morris Heights, New York, has been again opened in Miami in the Calumet Building, for the winter season.

The Treasurer of the Company, Clement G. Amory, is in active charge of this office and is looking after the fleet of Florida play boats which his company has shipped to Florida waters. The development of this boat has been largely due to Mr. Amory's study of the requirements of the sportsmen, who spend the winters in Florida. This design has proven to be exceedingly popular, and it seems as though there will be more than fourteen of these boats at Palm Beach and Miami before the season closes.

At this office in addition to facilities for the designing of new boats, a Brokerage Department is established which maintains a listing of boats which are for sale and charter in Southern waters, and which service is available to all interested.



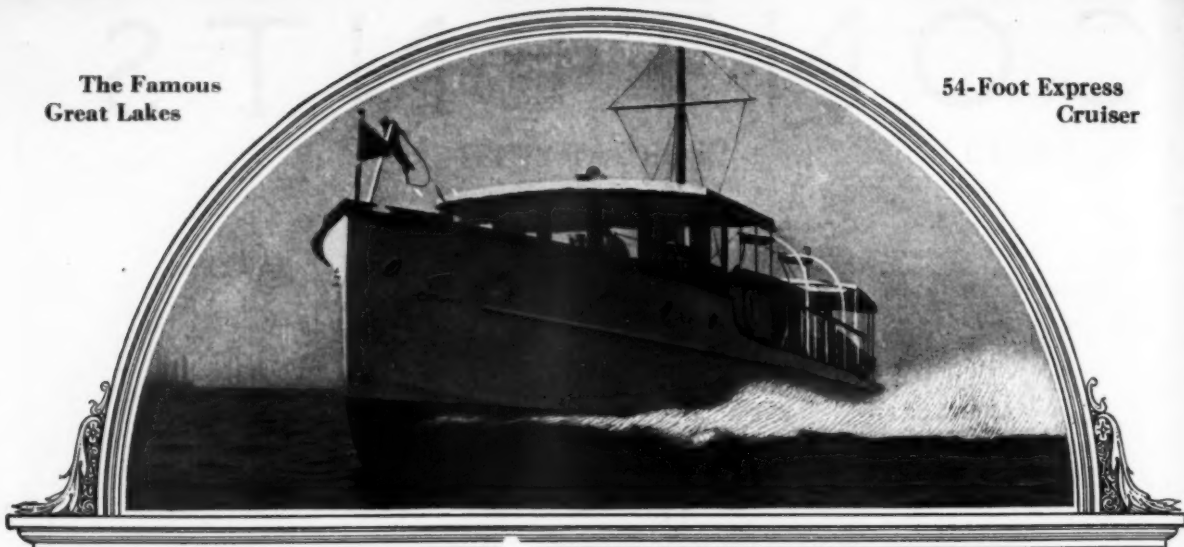
119 WEST 40th ST.
NEW YORK, N. Y.

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The Famous
Great Lakes

54-Foot Express
Cruiser



GREAT LAKES

**FOR IMMEDIATE
DELIVERY:**

- 26-ft. Great Lakes Special Runabout
- 26-ft. Great Lakes Packard Runabout
- 30-ft. High Speed Runabout
- 31-ft. Twin-Screw Cruiser
- 54-ft. Twin-Screw Express Cruiser

FOR years Great Lakes has been a by-word for the latest developments in the design and thorough construction of the finest cruisers. Now Great Lakes comes to the fore with a sensational runabout for \$2,750.00, setting a new standard of value. This in addition to the already famous Great Lakes Packard and other quality runabouts.

*Send for new Bulletin "A"
covering runabouts and cruisers*

GREAT LAKES BOAT BUILDING CORPORATION
Milwaukee, Wisconsin

The latest Great Lakes
Runabout featured for the
sensationally low price of

\$
2,750
\$

Setting a new standard of
economy in first cost and
maintenance of operation.



CHAP

Says

BAD manners are bad wherever you find them.

A reader of MoToR BoatinG has written to ask whether we DARE (the capitals are his) criticise the owners and masters of express cruisers who make boating uncomfortable for others by rushing past them at full speed. Do we dare criticise? We should like to keel-haul them. There is but one other breach of yachting etiquette as bad, and there are no offenders so flagrant as those who have the power to move through the water rapidly.

Perhaps we should not go as far as our reader who declares that nine out of ten owners of fast boats make a practice of seeing how close they can come to the little fellow without hitting him. After the speed maniac had "got his man" a few times in this fashion the fascination of the game would begin to wane. He would naturally progress to the next step of running down women and children in canoes.

But we do believe that nine out of ten owners of express cruisers are heedless of the trouble that lies in their wake. If they think at all of the discomfort and damage they cause the little fellow who is unaware of their coming, they think too late. It does no good to slow down when abreast of another craft, because the waves that will rock the dishes off its table and the pots off its galley stove have already been set in motion. It does little good for a thirty-miler to slow down to half speed before passing a smaller boat, because fifteen miles an hour is fast enough to stir up a tremendous commotion.

The express cruiser owner or master who is worthy of belonging to the fraternity of of motor boatmen will steer wide of other craft when he has the room or, in narrow passages, slow down to the point at which his wake flattens out.

We have advanced the plea of heedlessness for those who dash close to smaller boats in the fairway. There is no excuse at all for the man who steams at top speed through an anchorage. This is unmitigated selfishness and boorishness. We should like to find out whether mooring anchors will float when tied to the necks of such offenders.



Photograph by M. Rosenfeld.

Captain Clyde Hewes at the wheel of Carl G. Fisher's new express cruiser Shadow H, enroute to Miami Beach from the North

**MoToR
BoatinG**

119 West 40th Street
New York, N. Y.

From Northern Ice

Little Events of Every Day Boating Magnified By Lack of Knowledge Into Perilous and

By JAMES W. THORNE

IT was last February when the yarn I am about to spin got under way. At that time I was in New York on a combination business and pleasure trip. All Chicagoans know what that means, 3 hours business, 17 hours pleasure, 4 hours rest per day.

In some way a copy of *MoToR BOATING* got into my possession. Why I picked it out at the news stand is beyond explanation, as I have never been interested in boats that I know of. Perhaps the good looking cover caught my eye—just one of those casual buys we all make now and then. It might have been any one of a dozen other magazines that I usually look over, but some peculiar twist of fate made *MoToR BOATING* my selection at that time. At first I waded through the magazine merely looking at the illustrations, then something caught me and I started to read. The little bug was working but I didn't know it then. The second time I took in everything, beginning at the front cover, the little bug crowding me hopefully. Then I fell. I became an adventurous yachtsman in two moments' time, ready for anything or any place. I must have a boat quick—queer I had not thought of it before.

I slept on the idea (only 4 hours for Chicagoans, mind you) and in the morning found myself irrevocably sold. Back I went to the ad. pages of *M. B.* I got no further than the inside front cover, for there, for anybody to read was the story of the Elco cruisers, delivery from stock. The last was exactly what I had in mind.

Calling up the works I asked what they had for immediate delivery. A rather surprised voice (it was 10 below zero that day) assured me that they had a cruisette that could be made ready in a few days. "Come on over." I went over—somewhere across the river. You take a ferry, then a train, then walk.

I found the factory in spite of a clever camouflage of snow banks. Somebody had opened a trench that led straight to the office door. There was no missing it. Breaking icicles off the door, I entered and met the boss. "Yes, we have boats but where in Heaven's name can you use one at this time of year." I was hazy on that subject, but thinking quickly came back with "How about Florida?" that apparently was a happy reply. Regarded at first as some kind of a lunatic, I at once became a live Prospect. We went out to the shop. Never will I forget

that shop. A big two acre aerodrome, open everywhere, 10 below outside, 100 below inside. Even the boats looked cold and forlorn.

Yes, there was a cruisette. A one minute inspection and we rushed back to the warm office. That cruisette was mine then and there but the boss didn't know it. "You said Florida," he remarked, "When do you want to use her." "Tomorrow" I snapped back, thinking I might as well start something. "You can get a car in today, load and ship tomorrow." A sad look passed over the boss. "My dear sir," he began, "I'm sorry, the cruisette won't go in a box car. We can load on a flat and box tight but that will take several days, cost you \$200 for boxing and I am afraid it will take several weeks to get it to Florida." The neighboring stencg looked up to pass a sorry look, one of those "now see what you've done" kind. At that critical moment a big liner out in the harbor cut loose a whistle blast. It inspired an idea. "Can't you ship by steamer?" I inquired. The boss came out of his despondency at the word. Evidently I had said something worth while. Yes, it could be done, it had been done before but, but, but—when the weather moderates, etc. The buts and ifs became plentiful so I cut in with a statement of my position. My time was right now, I wanted that boat at once or I didn't want it at all. "I'll leave it to you to find the way. Ship on Saturday and the boat's mine, fail and the order is automatically cancelled. "But the ice?" he replied. "What ice?" I innocently asked. I thought he would choke on the word. "Ice? Its everywhere, our basin is frozen two feet thick, the bay is frozen, the river is full of floes, so are the dock slips. If this weather holds another day everything will be frozen tight.



It was one of those trick anchors, the kind that folk

to Florida's Sunshine

Hazardous Adventures at the Beginning of A Landlubber's Conversion to A Yachtsman
Illustrated By MARTINUS ANDERSEN

Saturday morning I received a message that the boat was on the way over to the Savannah line and would load at noon. Promptly at noon I was at the dock with my luggage. Yes, the steamer was there only it was out in the middle of the slip with three tugs trying to jam it up to the dock through 30 feet of slush ice. By two o'clock they had it close enough to get some extra long gang planks across. The North river was solid with slush ice. All the ice in the world appeared to have been marshalled about that partic-



Neither Bill nor I could make head or tail of it

ular dock. The steamer was to sail at three but fortunately, and getting ahead of my story a bit, it did not sail until midnight. I found a radiator in the saloon from which there was a clear view over the river, and settled down to do one of two things—take passage if my boat showed up, retreat if it did not. And so the winter afternoon passed. Just at dusk I picked out something out in the ice field that looked promising. It was a tug with something small in tow. My last view as night settled convinced me that my boat was trying hard to make it. The tug had a yachty something behind and what crazy yacht but mine would be bucking the ice floes at that time. Hours afterwards she came alongside with two of the coldest, most tired men aboard I have ever seen. They had started the day before under tow but froze up in Newark Bay and lay there all night. A second tug was signalled and broke ice for them. Then they fought their way over. That's their story anyway.

It's about time to find a name for my boat so let's call her Cricket.

The boss stevedore took charge and after many false starts, finally got the slings under Cricket and hoisted her into a cradle on the forward deck of the steamer, City of Montgomery. Three days later she went overside at Savannah, Ga.

Now about myself—to get a true slant on the story you must know something about its writer. Yachtsman? No. Navigator? Double no. Mechanic? Can drive a Ford. Ever handled a boat? Yes, an Evinrude. Know his boat? Instruction book included with equipment. Knows how to read. Understand charts? Aren't they printed in English for anybody to read who knows how? Waterways? The chart shows them. Oh my, looking back, it was a crime to let me get started on that voyage. I had an idea that all there was to it was to start the motor (page 2, instruction book), look after the lubrication (page 9), stock up with gas and follow the inside passage to Florida. So I telegraphed some friends to join me at Jacksonville and prepared to sail the following day—only 125 miles through unmarked, complicated waterways, possibly the worst on the Atlantic coast. Just a nice day's run, I thought. Again I say, it was a crime.

My guardian angel interfered long enough at Savannah to show me the wisdom of putting aboard a supply of provisions and cabin supplies.

Cricket was plastered an inch deep with cinders from the steamer's funnel, so I tied up, took on a colored lad and spent the entire day fixing up. We washed down from stem to stern with gold dust, inside and outside, and by late afternoon had everything immaculate and the supplies stowed. All set to start in the morning.

The cabin of Cricket made up for the night was a paradise for any tired man and I turned in highly elated over the prospect of a wonderful cruise through Southern waters in my staunch little beauty. But what's that sound?—I am all awake, brought out by the sound of slushing water. Yes, 'twas midnight. Jumping out I landed in a foot of water on the cabin floor, the turned on light showing everything afloat. Strange thought I. Then I remembered reading somewhere that a new boat always leaks at first. Has to swell, probably be all right tomorrow. So to the pump. Dawn was just showing when I finished that job.

I rolled out on deck later and noted a beautiful sunrise, a clear sky, a warm, soft air and then something else. Cinders everywhere—the day before, gold dusted deck, cabin roof, cockpit again covered with them. Cricket was a sight. A grinning sailor on the wharf was taking in my discomfiture. "Kind of dirty, aint she Cap?" he volunteered sympathetically. "The chief blew out the

boilers last night" he added, nodding toward the U. S. Gunboat Yamacraw tied up not twenty feet ahead. Now the Yamacraw was not there when I turned in the night before so she must have sneaked in during the night and, of course, had to pick that night to blow out her boilers (whatever that means). There was some satisfaction in seeing that the Yamacraw had been entirely impartial for sailors were washing down all over her and it was easy to see that cinders was what they were after. It took three hours of hard work before the Cricket was anywhere near presentable.

Now for the start. "Straight down the river" a waterfront lounge informed me, five miles, then turn into the branch and follow the main channel to Thunderbolt. Easy, and in a few minutes I was on my way. Cricket was a darling. We ambled the first five miles with everything working per catalogue, and picked up the branch as directed. Jacksonville was only a question of 12 hours at 12 miles per—didn't the catalogue say she would make 12 miles? There I would pick up my friends, take on supplies and a sailing we would go. A few miles and a fork came in sight—one of those take your choice kind, both leads appearing equally desirable. Out came the chart for enlightenment but the chart was on too small a scale to bother about a mere fork in a river. I might as well confess it here as later. In my ignorance of

charts I had let a chap sell me a one piece affair covering the entire stretch from Charlestown, S. C. to Key West. Local charts did not enter my life until much later in the cruise. On a chance I went left (port, I suppose I should say) and brought up hard aground before a mile was covered. That was just what I wanted for it was positive proof that I had guessed wrong. I got off and headed back for the other fork and in due time without further mishap arrived off Thunderbolt. There I anchored and pumped for a few hours. Queer, how a new boat leaks. A smart looking yacht was nearby and as I was taking her in, I heard my name and saw that somebody aboard knew me and was hailing. A boat soon came over and brought an old time

DO NOT SKIP THIS STORY

Every yachtsman will appreciate the grim humor of the situations described in this story. We all remember our first experiences on board a yacht, and the many puzzling events which caused our troubles. How many of us have not gone through identically the same experiences as the hero in our story and have suffered the same mishaps which he did. We are sure you will all enjoy reading this tale, since it truly shows that confidence and self reliance are necessary qualifications to boating.

friend, owner of the yacht. He said he was about to get under way for Jacksonville. "So am I" was my reply. "Know the way?" "No, but I can find it. All inland passage, you know." He looked thoughtful but said nothing more then. "You start and I will trail you," I added, as he started for the yacht. In ten minutes his tender came chugging back. "See here," he said, "You are tackling the worst stretch of water between New York and Florida, crooked all the way, poorly marked, all kinds of shoals and trouble spots. You will get lost sure. Let me put a line on you and tow you through a flying."

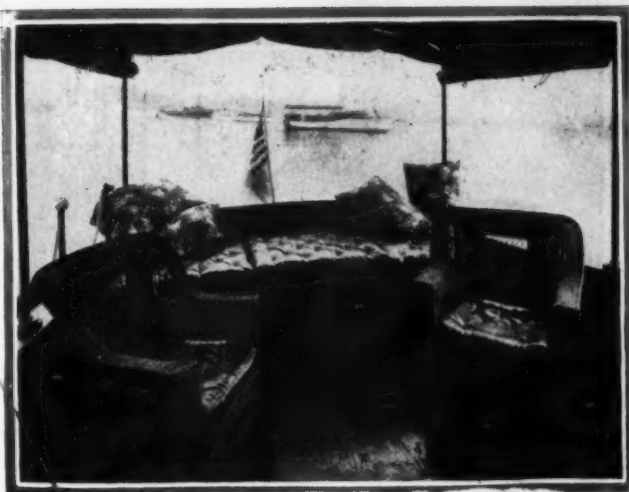
A line on Cricket! My feelings were outraged and bristling in a second. I was on a pleasure cruise—a cruise mind you, not a towing expedition. Perhaps I was polite in reply, perhaps not. I tried to be, but the substance of my reply courteous was that I would spend a month searching for Jacksonville before I would accept a tow. "Just get under way and I will follow" I finished. And so we started. All I had to do was to follow and keep up. The yacht was making about 12 miles but Cricket could do that too with everything wide open. It was good fun and I had a delightful morning. Taking a chance on the helm, I dove into the cabin to hunt out a bite to eat. Horrors, water was slushing around just over the floor boards. I couldn't think of anything to do to meet this unexpected situation, so held on after the yacht, wondering what the next move would be and hoping for some lucky change in events. To stop and pump would leave me alone out in that wilderness of sloughs, blind leads, and twisting channels. I had seen enough by then

(Continued on page 58)

Sonny Boy

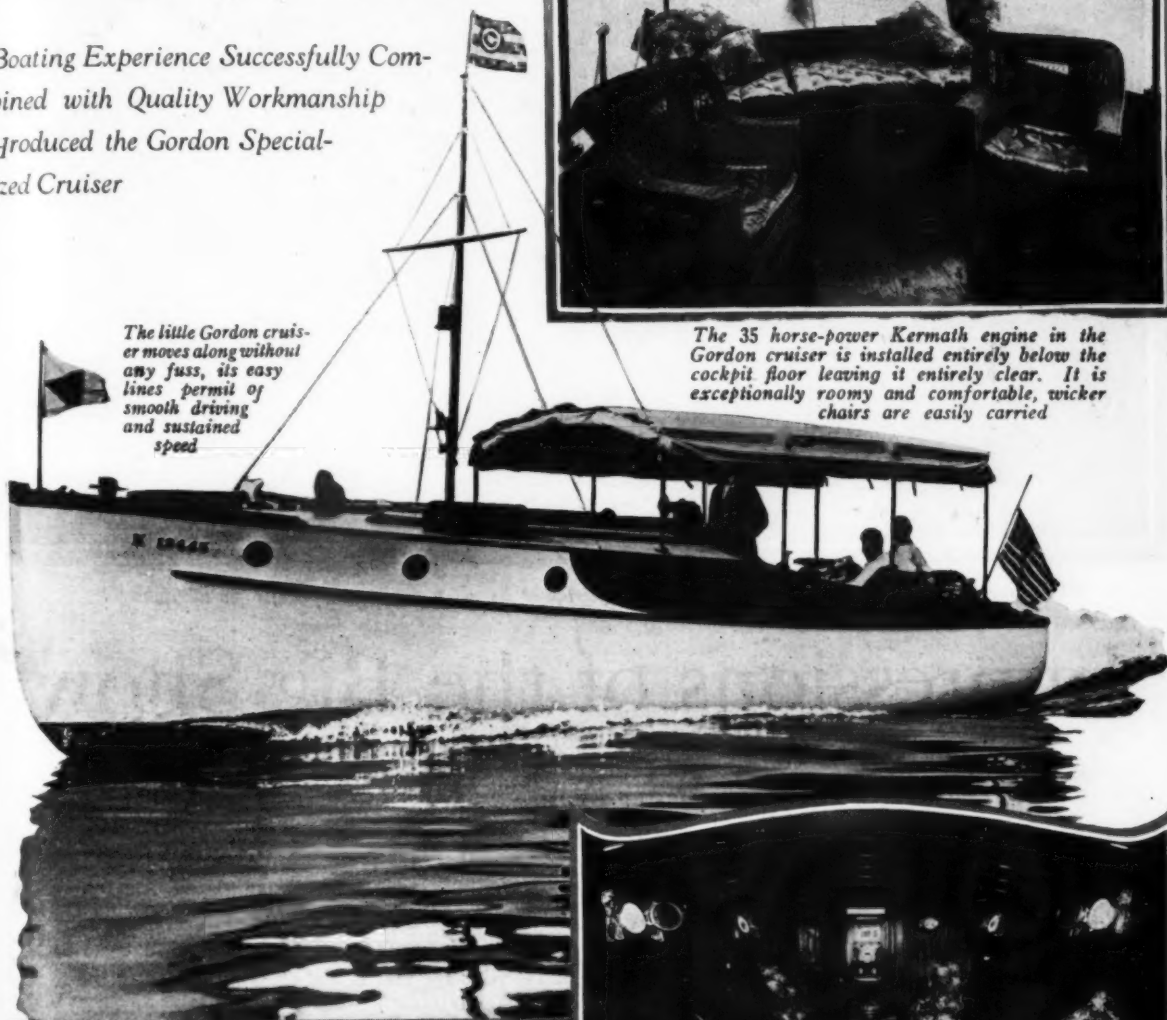
The Ideal Cruiser

Boating Experience Successfully Combined with Quality Workmanship Produced the Gordon Specialized Cruiser



The little Gordon cruiser moves along without any fuss, its easy lines permit of smooth driving and sustained speed

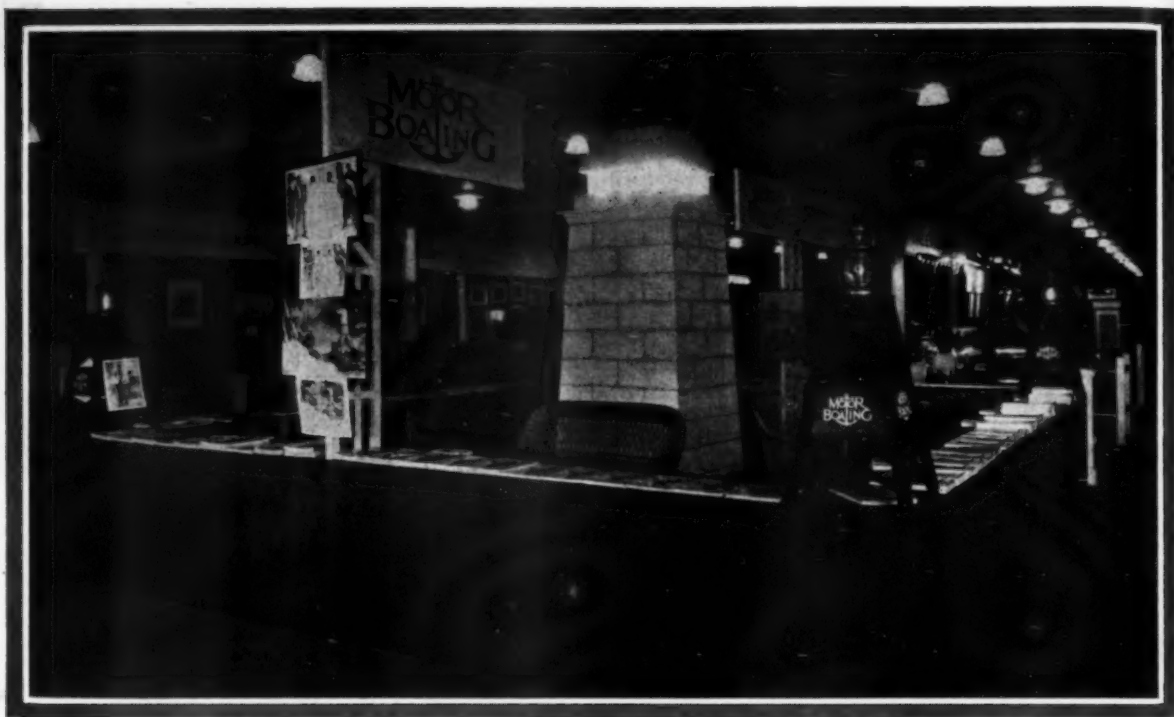
The 35 horse-power Kermath engine in the Gordon cruiser is installed entirely below the cockpit floor leaving it entirely clear. It is exceptionally roomy and comfortable, wicker chairs are easily carried



Looking forward in the cabin of the Gordon cruiser, discloses the built-in berths with the uppers folded back. The interior finish is entirely of mahogany, with cypress carlins finished bright, which gives a very pleasing effect



The galley and ice box are at the after end of the cabin. A Kampkook stove furnishes ample cooking capacity, while the ice chest will keep cold for four days with 75 lbs. of ice. Sink, pump, faucets, etc., are out of sight when not wanted. Locker space for provisions, utensils, and clothing is abundant



The attractive display at which MoToR BOATING entertained its many friends and visitors to the show

Impressions of the Big Show

*A Brief Stroll About The Most Successful Motor Boat Show
Reveals Many Points of Interest*

By Alfred F. Loomis

IN an article of restricted length it would be easier to tell what was not at the 19th National Motor Boat Show—because nearly everything that you can think of in the way of modern inventions for speed, comfort, and happiness was there. More boats than ever before were displayed on the big floor of the Palace, and this was not entirely because Port Elco, the permanent home of the Elco Company wherein is exhibited the full line of Elco cruisers was made a part of the general exhibit. The Great Lakes Boat Building Company sent a 54-footer from the middle west, the Greenport people dispatched two smaller boats from their works on eastern Long Island, Consolidated came down from Morris Heights with boats and engines, Belle Isle Bearcats made a distinguished showing, and so on. If this were a catalogue I should be hard put to mention all the names, let alone describe all the entries.

One feature that must have impressed all visitors to the Show was the spirit of optimism among those engaged in satisfying the marine wants of the public. The event took place early enough in the year to give builders a chance to make good on their promises before warm weather sets in; while it was far enough removed from the closing days of last season to catch prospective buyers with the urge to go in for boating with more energy (and coin) than ever before. The contemporaneous Automobile Show, instead of detracting attention from the really big event of the show year, actually drew visitors to the Palace, and the genial Ira Hand reports that gate receipts have never been as large. After all, you couldn't expect a man to reserve accommodations on the Lexington Avenue Sub-

way for an all-day run to the Automobile Show, when by stepping around the corner to the Palace he could see bigger and better things in automotive equipment.

From the best information that I could gather a portion of the populace that is not often mentioned in the society columns was present in large numbers at the boat show. I refer to the humble, lowly individuals who go down to the sea in ships, but who do not go down to fish. They take short trips to an indefinite destination and return under cover of darkness, and as they can't swim or fly they are required to carry out their hazardous undertakings with motor boats. Those gentry were there, with cash. And, mingling with them, but unknown to them, were officials of the government who are also interested in large power in high-speed chunks. They also go down to the sea in ships but not to fish. Do you see what I mean? Bootleggers buy fast boats to evade the Revenue officers, and Revenue officers buy faster boats to catch bootleggers—and the development of the marine engine goes on.

Parenthetically speaking, America took its first lessons in the building of fast ships when in Colonial days Britain prohibited the importation of rum from Jamaica. Boats had to be fast to escape the British patrol, and the patriotic builders of New England did what they could to make them fast. The result was a class of small ships that could sail circles around British sloops and frigates, and that started America on her way to world supremacy, in sailing vessels. I do not intend to suggest in a family magazine that the present reprehensible, vicious, and criminal thirst for liquor will do as much for motor boats as the



A new comer at the show; the Horace E. Dodge Boat Works of Detroit displayed two handsomely finished runabouts

laudable Colonial thirst did for sail. I merely point out that history is an interesting study.

A boat at the Palace that interested me out of all proportion to its diminutive length and beam was the Casey Sea Gull, a 26-foot sloop of standardized design built down in Fairhaven, Mass. Here was a saucy little craft for a man and his wife to play around in in home waters or to cruise into distant isles of enchantment. She is put together with an eye to service, and she has the look of being comfortable in a seaway. Like my old Hippocampus, she is a little blunt for windward work in lumpy weather. However, in a small boat you can't have everything, and, given a choice between speed and comfort, you will do well to take the latter.

And then there is the question of where they could put their clothes on small boats. If all hands came aboard in bathing suits stowage space would still be at a premium. It appears to me that in general the good intentions of boat-builders to provide ample sleeping accommodations are carried to an unwise extreme. The wise owner will be content with a party of three and enough room to stow their various belongings if as an alternative he must accommodate six and leave no space to hang a tooth brush in. It is all very well to argue that in a day cruiser you don't need a lot of stowage room.

Russel Gray of Thomaston, Me., showed a 28-foot motor cruiser that is of equal merit. This is a motor boat—not a stranger to the boating public, by the way—that gives every indication of having been designed and built by sea-going sailors. I was particularly impressed by its having anchors that will really ank. It will come as a piece of news to many builders and owners that ground tackle is supposed to cling to the ground even when the wind is blowing a gale. I have seen anchors on so-called cruisers that would only hold when afoul of a pipe crossing, and I have often seen anchor lines that a frisky mule could break with one toss of his head. But I didn't see these on the Gray boat. When a builder convinces you that he is interested in the all-important matter of insuring against his boat's destruction through stress of wind and dragging anchor, you may feel confident that other important matters have not escaped his attention.

On one of the other boats at the Show I looked in vain for a hawse pipe. "That's all right," said the demonstrator, "we lower our anchor and line through the forward hatch. We don't need any hawse pipe."

"Oh, I see," I replied. "You make the bitter end fast to the galley stove, and as long as you are at anchor you leave the hatch open, rain or shine?"

"Oh no," he replied. "We take the whole business on deck and make the bitter end fast to the capstan or the mast."

Well, that's a good way too. But when you are anchoring in a strange harbor in a blinding storm and a devilish hurry it gives you a comfortable feeling to know that you can heave the anchor over and let the rode whip through a hawse hole from the chain locker. And it gives you two comfortable feelings to know that the end is already made fast, so that if the rode does get away from you you won't finish that chapter on a sullen, rocky ledge.

It is my contention that if all designer's went to sea, the way William Hand and John Alden and a few others do, there would be none of these defects at which a critic can point the well-known finger of scorn. Take a very unimportant matter like the installation of fender cleats on the deck of a mahogany runabout. These cleats are admirably adapted to the purpose for which they are installed—that is, to suspend fenders over the side. But usually the cleats are large enough to permit a mooring line to be slid under them—and, as sure as taxes, the day will come when some landlubber will mistake them for mooring cleats and yank them out of the deck. And that will mean more work for the carpenter.

Or, while we are in a critical frame of mind, consider the case of a small sailboat that has a Charlie Noble sticking out of the cabin house about two feet and a half. I heard the salesman answer the criticism of a visitor with this comment: "Of course the boom would knock the stove pipe off if it hung all the way down. But when you are sailing you top the boom up to clear the pipe."

All very well and good. But when you are sailing you sometimes forget to top the boom up, and then when you come about poor old Charlie Noble dives overboard. The sailor who is least a fool takes the most elaborate precau-

(Continued on page 64)



by Andersen - *The*
PETREL'S NEST

By

Dorothy Thomas

Illustrated by

Martinus Andersen

*Concluded from
January Issue*

PART II

MAY CRAMMER was a shallow creature who could live only upon excitement. The excitement of being in love with her husband having subsided she might have, had she lived within reach of them, managed with thrilling movies, sensational plays and occasional dances, but here, in this quiet village she could not get excited even vicariously (except through thrashy reading) and she felt herself in a desert. Of course, as she often reminded her philosophic husband who never wanted that which he did not have, if they had a car she could, now that the road was completed on the island, go to the movies and enjoy some recreation, but as things were life here was intolerable.

Cappy had moved the Petrel's Nest within ten minutes of the Coast Guard Station and so he could take his meals at home, but he must always sleep at the station. Gossip came to Mother Bailey's ears that in the summer young Mrs. Cappy usually found an admirer among the young gentlemen who came to Barnegat on fishing and yachting trips.

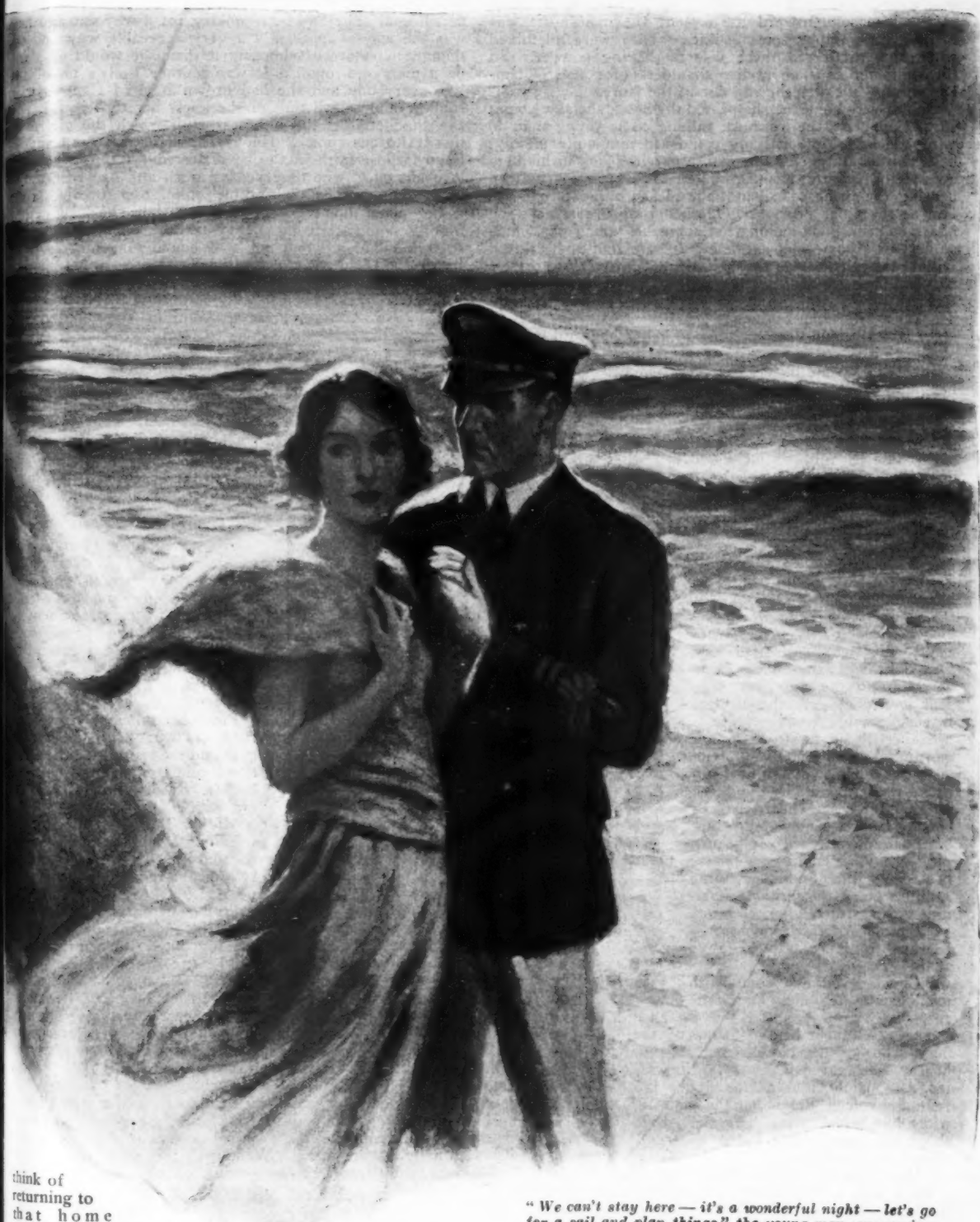
Often in the afternoon she would dress, after sewing and primping all morning, and saying merely that she was going for a walk, would leave the house, returning, flurried, excited, with flushed cheeks and glowing eyes, a few minutes before Cappy appeared for supper. The moonlight nights that followed Mother Bailey heard her creaking down the stairs and got to waiting breathlessly for her return. And Cappy was so content, so indulgent, so blind!

There she was, seeing it all, guessing it all, yet what could she do? Leave the Petrel's Nest? She learned that Cappy's wife had managed to go out just as much before she came—there was always a neighbor or some cheap hireling to look after the baby when she chose to take her pleasure.

Could she have been unmoved by the miserable play that was being enacted in the shabby, queer little house, Mother Bailey would have been in a seventh heaven of delight. A house to tend, a baby to cuddle and always the dear familiar sights and sounds of her island home. For herself she could ask no more of life.

Between duties she managed to get out on the beach to watch every change of weather and hour. She saw her sea on a windless day when it sparkled as blue as a sapphire and serene as a baby's eye, she saw it when it lashed and beat wildly upon the shore in a rough nor'easter; in moonlight, or at sunrise. For hours she would watch the sand snipe with their quick, running steps glide swiftly over the broad beach like dainty land-lubbers, and the seagulls, with their narrow pointed wings, soaring and dropping and hanging over the waters like graceful sailing craft. And then there was always the lighthouse, steady, faithful, constant, standing there on the shore like a tried, unshakable friend.

And though she reasoned stoically that she should be satisfied with a month of this happiness she dreaded to



"We can't stay here — it's a wonderful night — let's go for a sail and plan things," the young man was saying

From these ramblings she never returned that her heart did not shed its own joys and sorrows and shroud itself in foreboding that concerned those others who dwelt beneath the brooding shadows of the Petrel's Nest.

"He's too old and staid for her," she would say, shaking her head. "He's a seagull and she's a foolish little sand snipe! She's always running about restless like and he just keeps on soaring high with his fancies 'bout Barnegat pirates and the like and can't see what she's up to."

One afternoon toward the end of the month she was making little Cappy some cookies. They were all mixed when she discovered there was no baking powder. So throwing her cape about her shoulders (for the September wind was chill) she ran out to the store.

On her way home, as she passed the hotel, she saw young Mrs. Cappy on the veranda, talking to a young man in white ducks. Mother Baily could see him quite plainly; he was lithe and well-built, with a careless look in his blue eyes and a pleasant, flashing smile. He wore a marine cap bearing the name of a handsome pleasure yacht that had lain at the Inlet ever since Mother Baily's arrival. She had seen such good-looking, irresponsible young gentlemen at her son's home and she knew at once that if he flirted with tawdry, little May Crammer it was for no good reason. Now she knew in a flash the cause of young Mrs. Cappy's flushed cheeks and sparkling eyes when she came home from her afternoon outings!

"I wish I could do something to help," she said later as she gave the enchanted young Cappy his sugar cookies. "But 'pears to me like if this were patched up she'd only be findin' another young man next summer. She's lonesome and she don't belong here."

Several nights later Mother Baily, looking from her window, saw a full, round moon hanging over a silver ocean and longed to be on the beach. As the baby had gone for a visit on the main land with a relative of Cappy's, she felt free to indulge the whim.

It was a fitful night. Ominous clouds blew across the face of the moon robbing the world for long intervals of its silvery softness; the wind whistled and sang through the dunes and catching up the fine, dry sand sent it circling into the air like wavering columns of granite.

"There'll be a storm before morning," she prophesied.

It was not yet eight-thirty when returning along the brow of the hills she heard voices coming from a sand valley below.

"Some moonstruck young people," she mused and would have passed on had not something familiar about the irritable feminine voice attracted her attention.

"I'm sick of this monotony—I want to dance—to be alive again!"

"Chuck it all and come with me," came the quick masculine response.

The resentment and defiance of the girl's words, the fiery ardor of the boy's struck deep into Mother Baily's heart. She moved a few steps forward, peering over the ledge to catch sight of the figure that belonged to that feminine voice. Below her the sand of the hollow gleamed white like bridal satin. The girl's dress flapped tauntingly about her firm, round limbs, a strand of her hair blew across the boy's face.

"Mrs. Cappy!" Mother Baily whispered shudderingly.

Here was a girl restive, straining against uncongenial bonds, reaching out in her lusty youth for more life. Here was a boy enthralled by the moonlight and the full, ripe body of a girl. There, a few hundred yards up the beach, pacing the hard, broad sands, was Cappy Crammer, gazing seaward, thinking happily of the wife of his heart. And here on the brow of the hill was a solitary old lady whose own unhappiness was being numbed by the tragedy that hung over these three.

Mother Baily's first impulse was to go to them—to say something to dissuade them, for there had followed plans for elopement. Plainly it was not the first time the pair had faced this issue and the girl seemed to need little enough

persuasion. She had been looking for a way out and here was the way—apparently a very agreeable way and she thought no more of choosing it than she would of a trip on a merry-go-round! It was Mother Baily's impulse to like everybody and she had grown fond of Cappy's wife, shallow and selfish though she knew her to be. But now she shuddered at the lightness with which the girl made this traitorous choice. Her one thought was for Cappy—Cappy whose faith was to be shattered—Cappy who could love but once, who deserved so much and had received so little. His wife couldn't go on fooling him forever. Even if her plans didn't go through this time she'd be getting into such an affair the next time the opportunity came. Anyone could see that she was bound to get away from her present life and that some man seemed to her the best means to that end.

"She'll break his heart sooner or later," Mother Baily whispered. And yet there was nothing she could do nor say now that things had gone so far between these two!

"We can't stay here—it's a wonderful night—let's go for a sail and plan things," the young man was saying.

Heavy hearted Mother Baily turned and, keeping close under the shadow of the hills, returned to the Petrel's Nest.

"That boy's not marryin' a shoddy little piece like her," she said as she undressed. "And Cappy givin' her a love so big and fine and him a one-woman man—the Crammers always were."

She culled these thoughts and others of their ilk over in her mind as she tossed in her bed in the low-ceiled room that let in the sound of the sea and wind.

She must have dozed more than she knew for a great flash of lightning with its accompanying crash, aroused her from oblivion.

Rain beat heavily upon the roof and what with the howling gale and the rising tide the island shook and trembled, swaying the houses of its inhabitants like cradles.

Mother Baily ran to close the window. Another sudden flash showed the lighthouse and the two dwarf red cedars that stood near it. Always fascinated by every change of weather she stood by the window, transfixed, looking out at the storm.

"I like to be on flat land where I can see what the elements is doin'," she whispered, trembling at the fierce beauty of the night.

Suddenly a red light shone in the sky. It sprang seaward, from the direction of the Light, quivered for an instant, then broke into a myriad falling stars.

"A distress signal!" she exclaimed.

That very day she'd heard Cappy complain that with the steamer replacing sailing craft and the perfection of maritime instruments there were now scarcely any wrecks worthy of the name. Well, with the moon full and this raging nor'easter, the boys would have plenty of excitement tonight!

In the days she remembered when coastwise four-riggers with several hundred passengers aboard went aground on the treacherous Barnegat shoals, every man and woman on the island turned out on the beach. That was when they used the old boat, bringing four or five passengers in at a time, then four or five more as fast as the little sealed craft could be sent along the pulley line. How everyone had worked—what running to and fro with blankets and flasks and bobbing lanterns! Every sort of vehicle on the island from the horse-car to the seaweed wagons had been pressed into service to take the rescued to hospitable homes.

(Continued on page 76)



Due to a very regrettable error the name of Miss Dorothy Thomas, the writer of *The Petrel's Nest* was incorrectly printed in MoToR BOATING's January issue, and we apologize for our mistake. Miss Thomas, it will be remembered is the author of a series of stories about the Mountain Folks of Virginia which have been appearing in McClure's Magazine during the past year, and which have proven to be one of the most entertaining features of that magazine

The Boat & Engine Market Abroad

*Conditions In Foreign Lands Improving and
Many Potential Sales Opportunities Exist*

By A. W. PAYNE



Mediterranean sea-ports are a fertile field for the introduction of modern engines



LAST spring the Department of Commerce undertook, through its commercial attaches and trade commissioners in foreign lands, to make a thorough survey of conditions governing the market for marine engines, motorboats, accessories and the like. This task was started by M. F. Hoepli, acting Chief of the Automotive Division, at the instance of American manufacturers and exporters.

Replies from several countries have now been received by Mr. Hoepli, and while their general tenor is somewhat pessimistic on present conditions in foreign trade, due mostly to unsettled economic and political conditions and unfavorable exchange rates, it would appear, withal, that there is at least a ray of hope for exporters. Indeed, it seems there is an excellent outlook in several fields.

The reports to be summarized here are those from officials in Cuba, the Philippines, Chile, Italy, Greece, Austria, Turkey, and several of the important islands of the South Pacific. Briefly, the reports showed a future potential market in Cuba for light marine engines equipped for salt-water use, but not at present. American engines are favored, 90 per cent of those used there are American made. The Philippines should be seriously considered by manufacturers looking for foreign extension, as a good market seems imminent there when the present political situation is settled. There is no engine or boat market seen at Santiago, Chile, due to absence of navigable waters; Valparaiso Bay, however, could use more motorized lighters, equipped preferably with heavy-duty Diesel engines, or similarly equipped launches for towing purposes.

American motors are favorably known in Italy, also, and there may be a market for small engines and outboard motors, but the rate of exchange and business conditions imposed by American manufacturers are main hindrances to trade. No marine engines are being imported into Greece at present and the market is considered dead for the time being on account of exchange and local economic conditions; there may be room for considerable expansion in use of engines as auxiliary to sail in coast-wise vessels, and for ferry-boats.

Austria shows no present possibilities in the marine market for a number of reasons, chief among which is the exchange rate. Austrian engineers, also, are giving their time to development of a Diesel-engine gearing which may place this type in a position to supersede steam on rail as well as on water. Turkey offers little present market, but conditions are reported that would appear to make that country about as favorable a field for sales extension as a foreign

manager could wish especially for the Diesel engine. About all the Turks need is education in motor-boating — the

For the long journey to foreign ports the packing of engines is important. American goods have suffered through lack of attention to this necessary detail



In the Orient vast numbers of people use small boats as homes. Where waterways are as extensive as this, new boats and engines are constantly in demand

water, wealth and other inducements are there in profusion. A market for outboard motors is also seen.

The many groups of islands in the neighborhood of Java will be an important market for engines in the future, and manufacturers should give a little more of their attention to this part of the world.

The reports may be summarized as follows:

TURKEY

The new Turkey has a long coastline with many bays and numerous islands, reports R. O. Hall, acting commercial attache at Constantinople. Inadequate railroads and bad highways have compelled the people to rely upon water transportation and communication, and the majority of the inhabitants live on the water or near it. In fact, the population of Constantinople, which, with its total of about 1,400,000, is about one-seventh of the entire nation, is scattered around the Golden Horn, along the Bosphorus and on the Sea of Marmora, virtually all living within fifteen minutes of navigable water. A very large portion of the wealthier provincials, those who might afford pleasure craft, spend the greater part of the year at the metropolis. Moreover, the scenic beauty of the Bosphorus and the nearby Princes' Islands is reported as unexcelled, there is a moderate call to sportsmen interested in deep-sea fishing, and the people are fond of boating.

Some trade obstacles are these: Thirteen years ago there were less than two dozen motorboats in Constantinople, and, the Turks being a semi-Oriental people, basic economic developments are likely to be slow. Lightering is still done mainly by sail- or hand-

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In England and other European countries the American engine is already well known. Manufacturers should take great pains to maintain the prestige of their products.



It was Drusilla's first Southern trip of such magnitude

Adventures of the Motorboaters

*How a Pair of Gasoline Crusaders Confounded the Inevitable Critic,
Who Thinks We Lead a Life of Lazy and Profitless Ease—The Lash
of Adventure on the First Lap of a Very Unconventional Cruise*

By W. LIVINGSTON LARNED

FOREWORD . . . A Bar Harbor cynic is the hidden mainspring of this story. Something he said and the way he said it, brought about adventures in motor boating which are certainly anything but conventional.

My chum had Drusilla in commission at the fashionable resort, and I met him there at the close of the season, for it had been tentatively planned to cruise southward to Florida, on the Inside Route, and make a brave attempt at physical recuperation. There was a great bond of sympathy between us—we suffered from balky Bronchial pipes.

And at the tail end of a nippy afternoon, this stout, red-faced, sardonic gentleman with the snowy hair and the unforgiving eyes, glancing at Peter's immaculate white trousers, blue coat and jaunty visored cap, said:

"No more of it for me. I have taken up Golf. Motor boating, young gentlemen, is the most wasteful, the most useless, the most prodigiously profitless sport in the world. Would you believe it. . . . I was once a Commodore. . . . I once belonged to The New York Yacht Club. . . . I knew the Maine crowd, from first to last and had a fifty-thousand dollar boat at Newport. I paraded around all dolled up in a deep-sea uniform, and went to port dances looking like The Admiral, in Pinafore! I spent two weeks of every summer at Nantucket, just to prove I could get out

there without shipping a pint of brine or getting seasick.

"Then, gentlemen, the futility of the sport suddenly came to me. I was redeemed, as it were. And I never see nice young chaps running the same pace that I do not want to warn them. The motor boat, big or little, is a breeder of inertia, of laziness. Keep it up long enough and you'll never want to work. It's a germ . . . not a sport!"

My temper surged upward until it spilled over, in a hot wave of resentment in cheeks and temples.

Peter . . . Peter the quiet, the reserved, merely smiled and smoked his pipe. He winked at me out of the corner of a jolly marine eye.

"Let him rave!" that look seemed to say.

"You may think I'm radical," continued the ex-Commodore . . . who, by the way, looked every inch of it . . . "but I'm in earnest. This opinion is based on the actual experience of something more than eighteen years, during which period I have owned a dozen high-powered speed boats with cup records, a yacht large enough to eat up dollars as neatly as she could eat up miles, and a varied assortment of small motor boats. Everywhere I went . . . everything I saw . . . gradually confirmed these pet convictions of mine that it was an initiative-destroying, vitiat-

ing human waste . . . that it headed nowhere, accomplished nothing in the end, and insidiously robbed a man of the human desire for work.

"I have seen three hundred motor boats, in a summer colony, minus any real objective . . . like so many hapless moths, fluttering here and there. When I owned a boat of my own, I grew to abhor my office and my desk. If I wasn't lolling around on deck, I was utterly miserable. My vacation cruises in Florida each Winter steadily lengthened, from two months, to six, and even then I didn't want to come back. The utter and absolute futility of these trips was what finally amazed me. I seldom went anywhere with a genuinely constructive reason."

There you have it!

A man old enough to know better had pronounced an ugly indictment against motor boating.

The fact that there was no logic in anything he said, no foundation of truth, did not detract from our resentment. Summed up in brief, the ex-Commodore had declared that the motor boat enthusiast was a waster. He churned water, expended gasoline and gave nothing to progress or civilization in return.

What follows is a series of refutations of this kind of misguided chatter. And you would be surprised to know how many there are who entertain just such intolerant ideas!

The cruise of Drusilla has just been completed. In many respects, it is one of the most interesting true adventure tales ever chronicled in behalf of the small motor boat. We crossed no wide oceans and we dared no uncharted seas. This is not a story of rugged seamanship. It attempts only to prove that every craft may have its mission and every owner a high ideal. It gives the lie to all of the ex-Commodores from Bar Harbor to Malota who claim that we who love the throb of a motor and the glint of sunlight on polished wood and brasses, are a gang of wasters.

You will accompany us on a balmy cruise through a thousand tropic keys; you will drop anchor off the mouths of rivers where Fish Pirates ply their forbidden trade; you will steal along in the wake of the Shrimp Fleet, as it bears out to sea and then home again, beneath a cloud of shimmering gulls and gourmand pelicans, on a quest for proof that Florida fish are being rapidly depleted by an insidious practice . . . you will ascend dark streams, swollen by the Gulf tide, and learn how futile are man-made laws against the slaughter of the beautiful Egret, and you will come up under the lee of strange mangrove islands, on which liquid poison is distilled. We invite you to come along. You are our guest. Light your pipe, drag

a canvas chair up on deck and make yourself at home. Captain Pete . . . cast off! We are away to the Coast of Adventure!

* * * * *

IT was our second day in Florida waters! The cruise down had been tempestuous, often dangerous, and always exciting, emphasized in these respects by the fact that it was Drusilla's first southern trip of such magnitude.

She was tied up at a ramshackle gasoline dock, off the sea wall—names of places are taboo, for reasons which

will shortly be obvious—and on three sides rock-ed glittering flotillas of handsome, perfectly-appointed yachts, runabouts, cruiser-houseboats, modern triple-screw floating hotels, and countless small motor crafts of our own size and type.

A Key West veteran, familiar with every mile of the southern cruise; picked up in New York, and now wedded to us by some sort of profound respect and affection for Youth (he was fifty) had brought us safely down this far . . . a frontier village of the sunshine state. Captain Mock was both invaluable and indescribable. He was twenty men in one, but, first of all, a super-seaman. His headquarters were in Miami, where he owned a smart little 42-foot cruiser, brought down, years ago, from Narragansett. But Mock was a Gypsy at heart and his money demands were slight.

"I keep busy where I find folks I like," was one of his philosophies of life, "dollars ain't much . . . it's people that really count. And I've grown damned interested in you boys. I'll stay with you until I show you how to cure them bum Bronchial pipes of yours."

It was here, at this sunny Florida dock, however, that we first met the enigma of the expedition and its star performer, as events will eventually prove. Ten minutes after Drusilla crept in, through the net-

work of treacherous sand bars and hidden shoals of the river, and tied up, we caught sight of Thomas Thomas, leaning against the yellow ochre side of the fish-and-oyster house, watching us with casual interest.

He was an ideal type, perfect as to figure, young in a baffling way, and with features that suggested the conventional motion picture hero. I would call Thomas Thomas handsome, as men go. He wore, that afternoon, a rather slovenly norfolk sport-suit of misty, rumpled gray, and a well-seasoned corn-cob pipe hung from a corner of his expressive, red-lipped mouth. On his feet were very slipshod Indian moccasins. He wore no hat . . . never did.

It took less than twenty minutes for us to recognize a
(Continued on page 84)



Shrimp fishermen hanging their nets up to dry after a record-breaking catch of shrimp

Your Cruiser Should Have Lights

An Authoritative Article on The Proper Methods of Assembling Electrical Units to Produce the Best Results in Service and Efficiency

By E. J. Stone

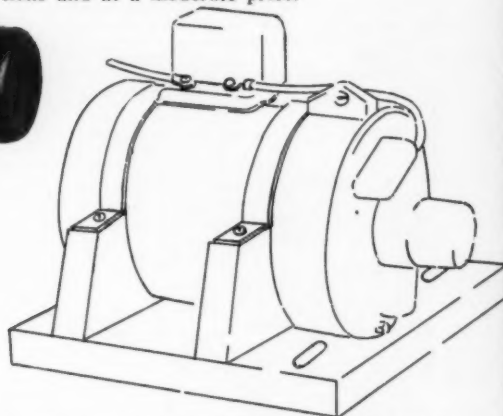
Automotive Equipment Engineer
Westinghouse Electric & Mfg. Co.

IN laying out a lighting system for a runabout or cruiser the primary considerations are, taken in their proper order, service required, cost, and method of installation.

This article is intended to cover craft already built and in operation and which are not equipped with an electric lighting system at the present time. This being so, we shall in considering the requirements take the case of a cruiser of 30 to 35 feet over all length as the basis for our layouts.

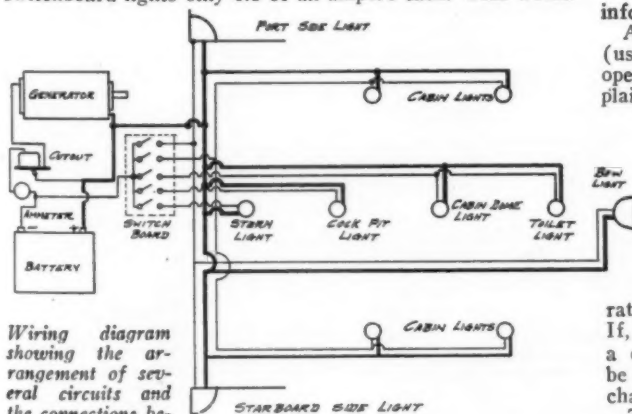


A standard type generator suitable for small boat lighting and at the right, the method of fastening it down to a base



The first step will be to take up the number of lights to be installed. This in the case of the craft mentioned would comprise the four running lights, a dome light in the cabin; toilet, and cockpit, possibly four side lights in the cabin, a compass light and one on the switchboard, a total of thirteen.

The running lights and cabin side lights would draw about one ampere of current at 6 volts while the cabin domes would draw about the same and the compass and switchboard lights only 0.8 of an ampere each. This would



Wiring diagram showing the arrangement of several circuits and the connections between generator and battery

call for a drain of 12 to 13 amperes on the battery provided all lamps were burning at the same time which condition would be the exception rather than the rule. We can safely figure the average drain on the battery with the craft at anchor to be about 7 amperes, which in the case of some skippers inclined to late hours might continue for a period of five or six hours at a stretch.

A six volt battery of 90 ampere hours capacity will take care of this load and the amount of current drawn out would, with a generator charging at the rate of 10 amperes, be replaced in about 5 hours running.

With the above as a basis, any modification of the layout given above can easily be figured out.

Having settled our requirements we can now proceed to consider the materials required.

First let us take the generator which, with the battery forms the back bone of the whole system.

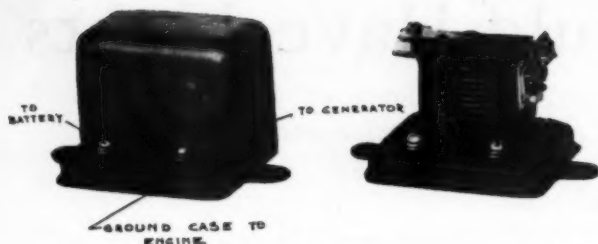
With the advent of the automobile generator in its present highly developed form a high grade battery charging unit immediately becomes available for small installations and at a moderate price.

These generators can be procured through most any of their manufacturers' service stations throughout the country at prices listed at the end of this article.

When purchasing the machine insist on the following information and note same for future reference.

Ascertain the proper direction of rotation, the voltage (usually six) and the speed at which the generator should operate. Also have the polarity of the generator terminals plainly marked with the plus (+) and minus (-) symbols. If there is only one terminal have this marked and the method of connection will be taken up later. Also the output of the machine should be set at from 6-12 amperes output when the machine is hot. This setting depending on two factors—first, the manufacturers limiting rate of output when hot and the second, the service conditions you are going to operate under. If you make short runs and burn your light for a long period, a high charging rate will be required to keep the battery fully charged. If, however, you are making long runs and burn your light a comparatively short time, the generator output should be set at a lower rate to prevent the battery being overcharged and perhaps badly damaged.

This first setting is somewhat tentative and may have

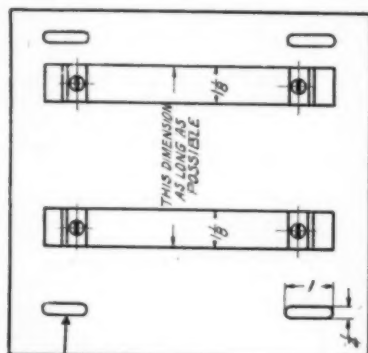


The automatic cutout mounted on the generator shown with and without its protecting cover

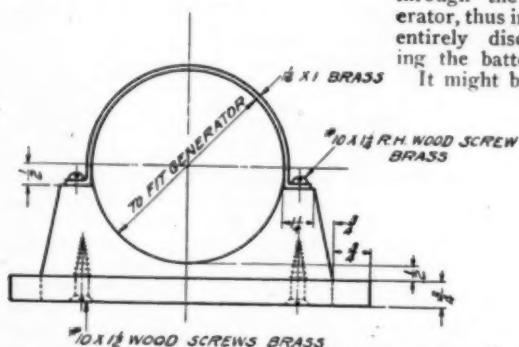
to be changed after the outfit has been in service a short while, it being perhaps necessary to raise the charging rate a little if you find the battery is not kept full or lower it if you find the battery is being kept up to capacity while the water in it is being evaporated rapidly.

The storage battery should be of the same voltage as your generator, and its plus and minus terminals should also be plainly marked.

It will pay in the end to purchase a battery of a reliable make whose manufacturer has service stations established throughout the country where reliable battery service can be obtained at all times.



FASTEN BASE TO FOUNDATION WITH R.H. SCREWS HAVING WASHERS UNDER HEAD



Detail drawing showing a properly designed mounting for a generator applied to an engine not originally equipped with one

described as a sort of an electrical valve which permits the passage of the current only in one direction—in this case from the generator to the battery.

Most generators are fitted with cutouts either located inside the generator or mounted upon it as shown in the illustration.

In case your generator has no cutout one can be purchased and mounted separately and connected as shown.

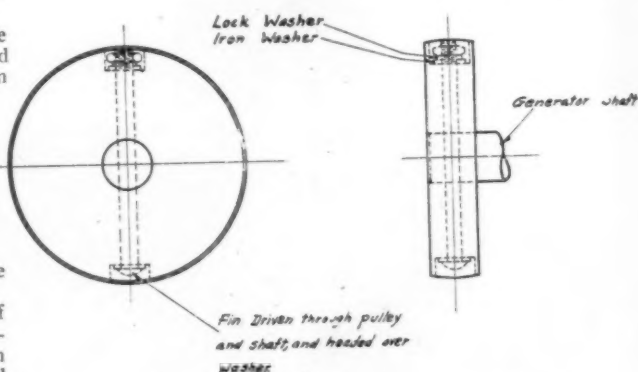
The most easily procured lamps today are, of course, those used in the automobile service and we should recommend those of the double contact type for this installation.

For wire, the No. 14 rubber covered will be ample for these requirements and this may be either carried on cleats or in the wooden moulding made for that purpose and procurable at any electrical supply house. Dome light fixtures and those for the compass and switchboard lights can also be procured from the same automobile supply house that furnished the lamps or at the marine supply houses.

Cabin side light fixtures may be obtained from several of the marine supply houses whose advertisements appear in MoToR BOATING's columns, or may be made from the standard automobile dash socket and a block of wood as illustrated.

Your present oil running lights can be fitted with adapters, procurable at your marine or auto supply houses, to carry the electric bulbs, or you can make these yourself by fitting the flush type of automobile dash socket into a block of wood which will take the place of the oil fount.

The switchboard should carry the circuit control switches, an ammeter to show the charging rate of the generator and a small light illuminating the meter dial. The switches themselves had best be of the knife type as this



Detail of a belt drive pulley which must be made of the correct size to supply the proper revolution rate to the generator

construction will give the least trouble. The miniature ones now used in some radio sets are very neat and serviceable. These with the addition of some nails, screws, electrician's tape and a little sheet lead will cover practically all the materials required outside of the generator mounting and drive.

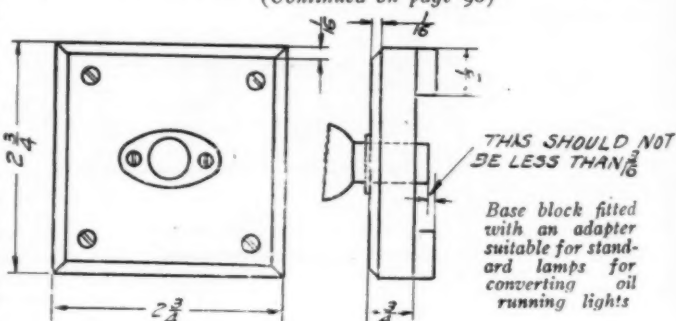
The first problem will be the installation of the generator and as only marine engines of a late design have made provision for this, considerable ingenuity will have to be exercised in solving this problem.

The drive by belt has simplicity and low cost to recommend it and is perhaps the most universal type for installations of this sort.

The generator may be held in a cradle fastened to the engine bed or to the floors and driven from the fly wheel by a flat belt. Details of mounting cradle are shown in illustrations.

In installing the generator make certain that it is so mounted that it will run in the proper direction. The speed of your engine and the diameter of flywheel being known

(Continued on page 96)





An Arctic Bluenose

Eskimo Sailors of the Far North Prepare for a Race by Building New Boats

By A. deH. Smith

ON the icy waters at the top of the map the historic struggle of Bluenose and Henry Ford is once more to be enacted as manned by full-blooded Eskimos, and with their red ensigns flaunting against the dun brown coasts, the three schooners, named after the Atlantic clipper fishermen, will race for the Blue Ribbon of the Arctic in the short northern summer of 1924.

Prairie-built schooners for the Frozen Sea is apparently a slogan full of meaning for the little brown men who are this continent's furthest north inhabitants; each year sees a flotilla of schooners, built in Edmonton, Alberta, and sent north over the two thousand miles of poleward-flowing rivers which link the outside with the Arctic coast. Like King Philip of Spain, Captain John Matheson of Edmonton yearly sends an Armada north to fight—but his vessels' ene-



Eskimo schooner being hauled over the Fort Smith portage en route to the Arctic Coast.

The schooner Arctic Bluenose at Edmonton before beginning its long journey



The several contestants in the race at Edmonton, before shipment



Eskimo schooners at Herschel Island in the Arctic Ocean

mies are not born of woman, but the work of the Creator—the barren, rocky and uncharted coasts and islands which hardly boast a name; whose mapping is pure conjecture, where the walrus roars, and where the chugging of the white man's gas engine sends the sea birds screaming from their rocky cliffs and the square flipper seals to their icy waters.

This then is the scene of the next struggle between Henry Ford and Bluenose; they will race from Herschel island near the Alaska border eastward to King William's Land, loaded to the gunwales with the families, friends, and friends' friends of Amatik, Poughiak, and Innitok returning with cargoes of white fox skins to pay for their vessels. Rules will be noticeable by their absence.

Every inch of canvas will be spread and the first one back with the furs will be entitled to carry the Arctic equivalent of the broom at his masthead.

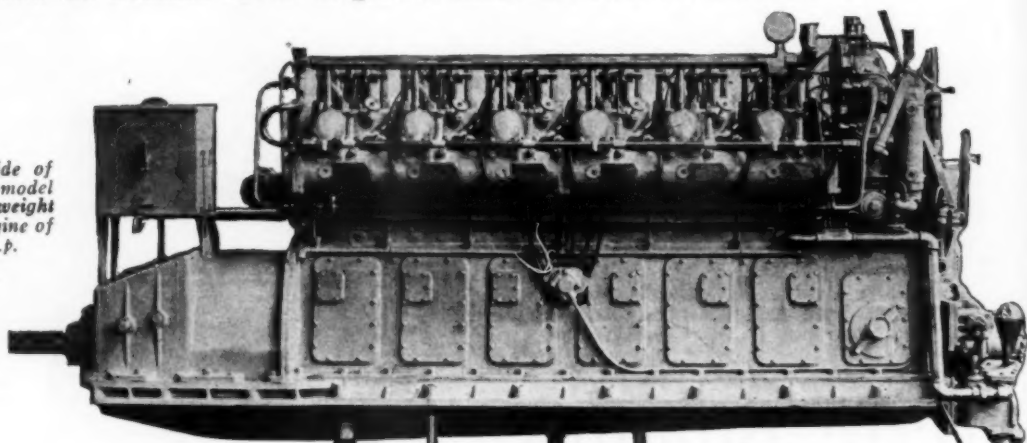
The dwellers of the Arctic coast are some of the best seamen which blue water pro-

(Continued on page 84)

A New Small *Diesel-Type* Oil Engine

A New Unit of Relatively Light Weight Which Has Been Produced to Meet the Demand for an Engine of Medium Power for Yacht Service

Starboard side of the Winton model 105 light-weight heavy oil engine of 90-100 h.p.

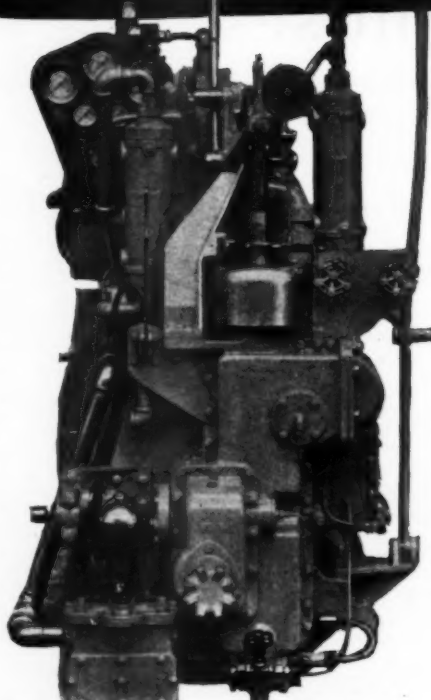


IN the production of a light-weight 90-100 horsepower Diesel-type oil engine the Winton Engine Works have achieved a purpose, that being to provide an engine for medium-size yachts comparable with the power plants of the large sea-going yachts that up to this time have alone enjoyed the economy, reliability and safety of the Diesel-type oil engine.

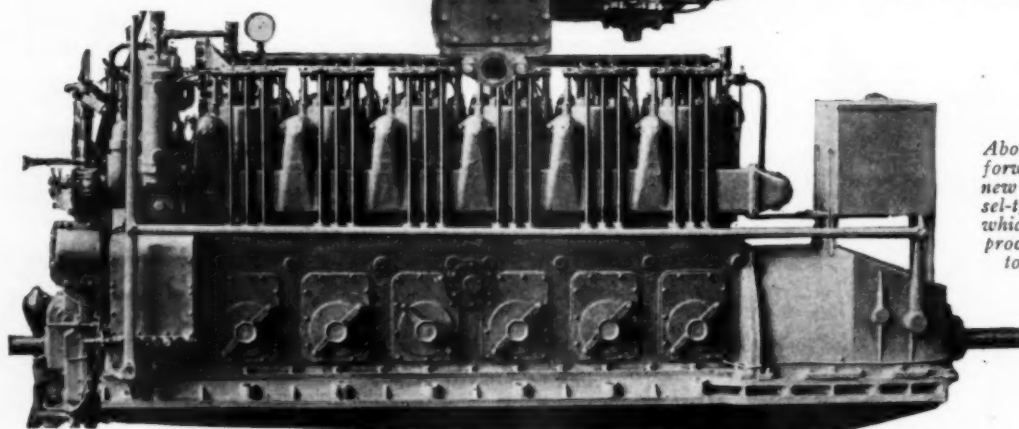
Smaller yachts may now have an engine which, in addition to being quiet and smooth-running, is free from complications, being as easy to care for as the gasoline engine, but which can be operated at one-fifth the fuel cost, this being the difference in the use of gasoline and of fuel oil. The application of the Diesel-type oil engine of small horsepower is also a boon to the medium-sized yacht owner in that sufficient fuel oil for an entire season's operation may be carried

in the same storage as would be required for a temporary supply of gasoline and with entire freedom from the hazard that is the dread of the gasoline user.

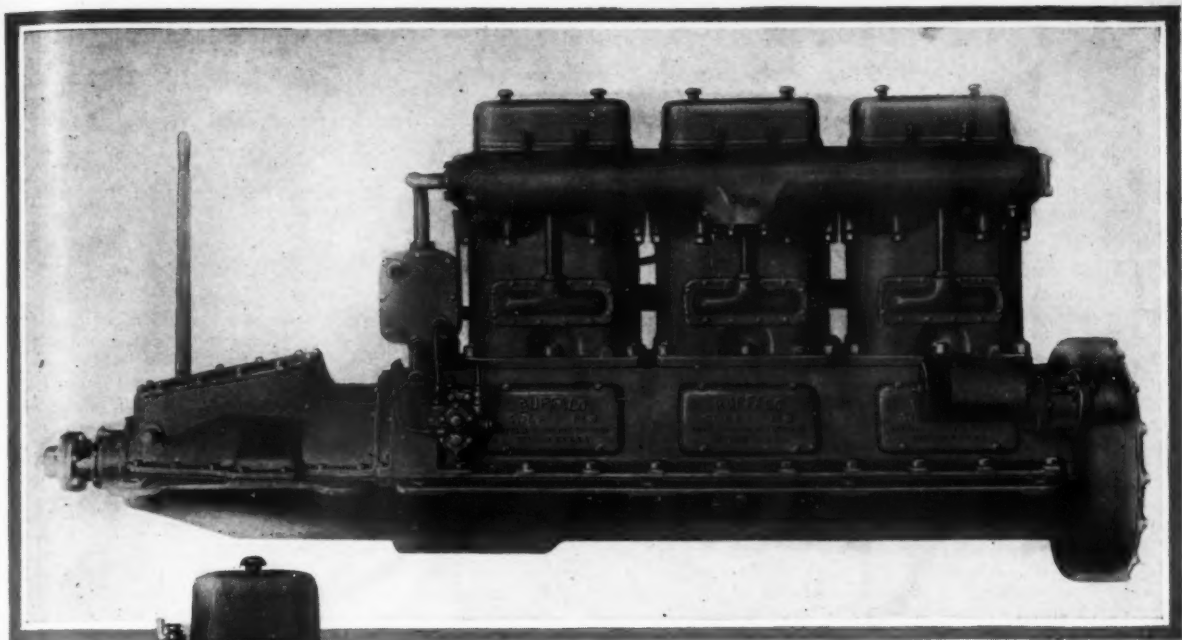
This Diesel-type engine is made in the 90-100 horsepower size for installation in single or twin units, either direct or electric drive, as the medium-sized yacht would utilize that amount of power. Its weight is little more than that of the heavy-duty gasoline engine and in design and workmanship the long experience of the organization of the Winton Engine Works as manufacturers of high-grade engines is shown at its best. This model is a six-cylinder unit with a $6\frac{1}{2}$ -inch bore and an $8\frac{1}{2}$ -inch stroke. It is designed to develop a full 100 h.p. at 600 revolutions. Its weight complete with a reverse gear is 7,700 pounds. It is fitted with a progressive-type three-stage air compressor which is used to supply air for starting purposes and also for fuel injection.



Above is a view of the forward end of the new light-weight Diesel-type oil engine which has just been produced by the Winton Engine Works



Port side of the same unit above showing the three-valve push rods per cylinder and the similarity to overhead valve gasoline engines

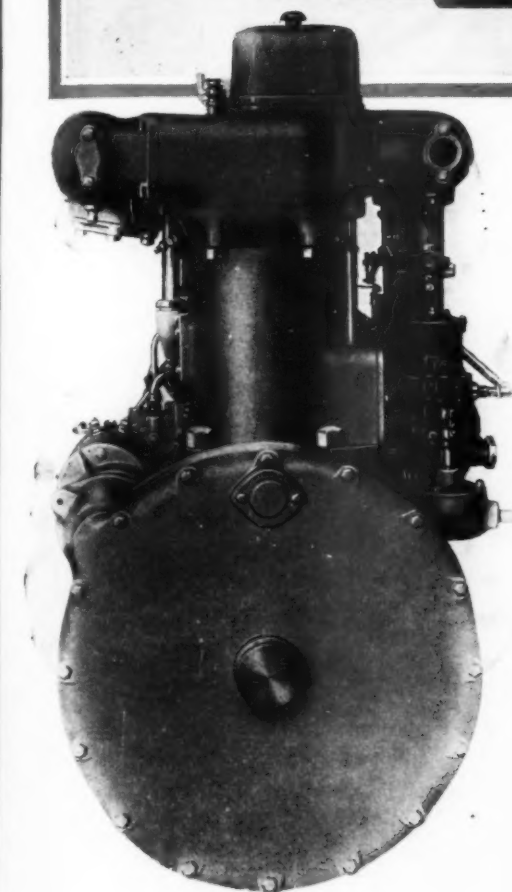


The newest product of the Buffalo Gasoline Motor Company is offered to provide a suitable power plant for the fast express cruiser and large runabout. It combines to an unusual degree the reliability of the medium speed types with all desirable features of the high speed types

The Buffalo Express

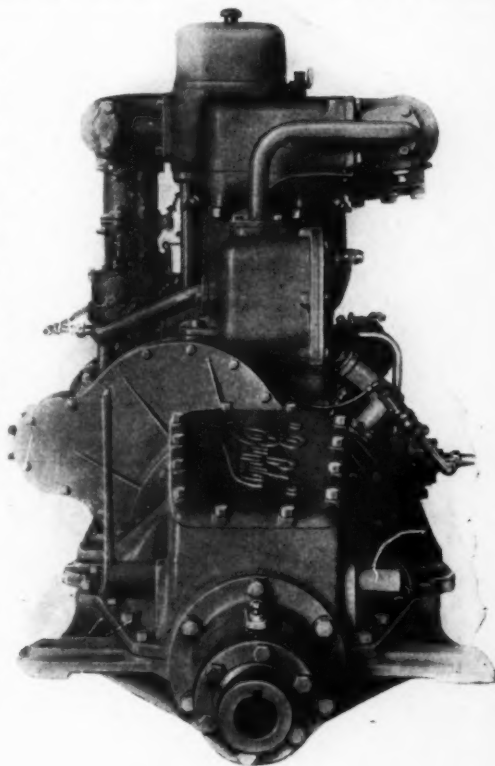
An Engine of Exceptional Power and Ability Produced to Meet the Needs of Fast Cruisers and Large Runabouts

Briefly the engine is of 6 cylinders and 5½ by 7 inch bore and stroke with overhead valves. The cylinders are cast in pairs with machined combustion chambers. Cylinder heads are removable and secured by nickel steel studs. Intake and exhaust valves are both of ample size. Pistons are grey iron of light weight with three leak proof rings at the top and a scraper ring at the bottom of the skirt



The engine is clean and compact. A feature that should appeal to the boat designer is the fact that the engine does not require a high foundation, the distance from center of crank shaft down to the lowest point being less than usual

The manufacture rates this engine at 200 h. p. at 1,400 r. p. m. which is very conservative as extensive brake tests show better than 210 h. p. at this speed, the range running from 110 h. p. at 800 r. p. m. to 221 h. p. at 1500 r. p. m. This model will fill a gap in the Buffalo line as their production previously did not include an engine of this caliber



ROSITA, A 21-Foot Racer

The Build a Boat Series Presents a Clever Design For a Snappy Little Runabout With Full Instructions and Specifications

By John L. Hacker, N. A.

Designed Exclusively for MoToR Boating

THIS fast little boat has been designed particularly to meet the demand for a speedy little boat of moderate size and cost, and which, at the same time, will be seaworthy and durable. By reason of the little engine which is called for, the craft will be an economical one to operate under practically all conditions. While primarily designed as a three-passenger boat, another seat can easily be provided for so that four or even five persons can be carried readily. As a suitable design for a one design class to be built in any one locality or club, this little boat has much to commend it. It is simple in construction and should offer no particular difficulties to a clever boatman in the way of structural problems.

The power plant which has been called for by the designer is a four-cylinder model F-4 Scripps marine engine, with which it is expected a speed of close to 28 miles can be made. A speed of this nature is something which was really unheard of in a small practical boat of these dimensions in the past. The recommended propeller for this boat is a three-blade wheel of 14 inches diameter and 16 inches pitch, which the engine is expected to turn up close on to 2,200 revolutions. As it is expected that this design will meet popular favor, Mr. Hacker has arranged to prepare in advance many of the special fittings needed in the construction of the hull. He will be glad to supply these to any or all who contemplate building a boat from these drawings, at a very reasonable cost.

In order to build a boat of this kind it is again necessary to secure a suitable building or quarters in which the work can be undertaken. The structural features are in the main similar to other designs published previously. Any one who has followed the previous designs in this series will have no difficulty in reading and understanding the drawings giving the data for this boat. The first step naturally will be the construction of the paper molds to full size, and their reproduction in wooden form. The dimensions given in the table of offsets are to the outside of the planking, the thickness of which must be deducted in order to give the net inside line to which the molds are cut. It will be noted that the spacing for the frames is not uniform, and it will be necessary to follow the dimensions given very carefully in order to have the boat fair up smooth and true. The keel is prepared from a piece of suitable white oak, and of the necessary length. It should be in one piece and properly beveled and finished. The molds at the various station points are erected and assembled along the keel as called for. These must all be carefully plumbed and stayed in place. The stem and transom are also assembled and attached to the keel in a proper manner. Temporary battens can be then secured fore and aft, tying the molds together and furnishing a form for the frames. These are all sawn from $\frac{3}{4}$ -inch material and if possible to obtain same, hackmatack knees should be used as they will make a better job. The inter-

mediate frames are to be steam bent and put into place after the planing is applied. They are to extend clean around from clamp to clamp and the space between the planking to be filled to suit. The chine is fastened to the frame with copper rod rivets, and it can be slightly tapered towards the stem. The engine stringers and foundations can be placed and securely fastened to the floor and frame. They are to be notched over the frames and so spaced as to suit the motor to be used. The spacing as shown on the drawings is suitable for the Scripps motor specified.

The clamp and planking stringers are notched into the frames and are spaced about as shown on the drawings. The center line of the stringers should be so spiled that it will come directly under the planking seam so that proper fastenings may be made on each side of the seam. The deck beams and such framing can then be fitted into place,

and the specifications which follow describe more completely the details of these parts. After the frame has been completed it must be carefully faired and trimmed. No unfair points must be permitted to remain and all joints which will be closed in should be given a coat of paint before this is done. The planking, is an operation which must be done with care and selected materials should be used in as long lengths as possible. All fastenings for planks should be applied in counterbored holes which are afterwards closed with mahogany plugs.

The finish, which will include the bulkheads, decking, and other trim, will follow in the usual manner, and each must be given its careful share of attention. There is a tendency among amateur boat builders to slight the

finish of the hull when it approaches the stage of this one, but patience must be exercised and the same care used as was the case earlier in the work. After the hull has been completed it must be carefully smoothed down and prepared for the paint and varnish which finish it off. These are operations which must also be done with great care, since a good job can be spoiled in the appearance by poor work in the paint shop. In order to make certain that all prospective builders of this little boat may be assured of a good job, the editor or Mr. Hacker himself are ready to answer any questions or give any assistance which may be reasonably expected on points which may arise during the construction. The specifications which follow are complete in all details and will describe the nature of the material to be used, as well as the method of application.

Specifications

The principal dimensions of this little boat will be: length overall 21 feet, beam overall 5-foot 3-inches, beam on the waterline 4-foot 8 inches, and draft 18 inches.

Keel: The keel is to be a single length of white oak or rock elm properly beveled and rabbeted to suit the planking. A hole is to be bored through the keel for the shaft $\frac{1}{4}$ -inch

(Continued on page 104)

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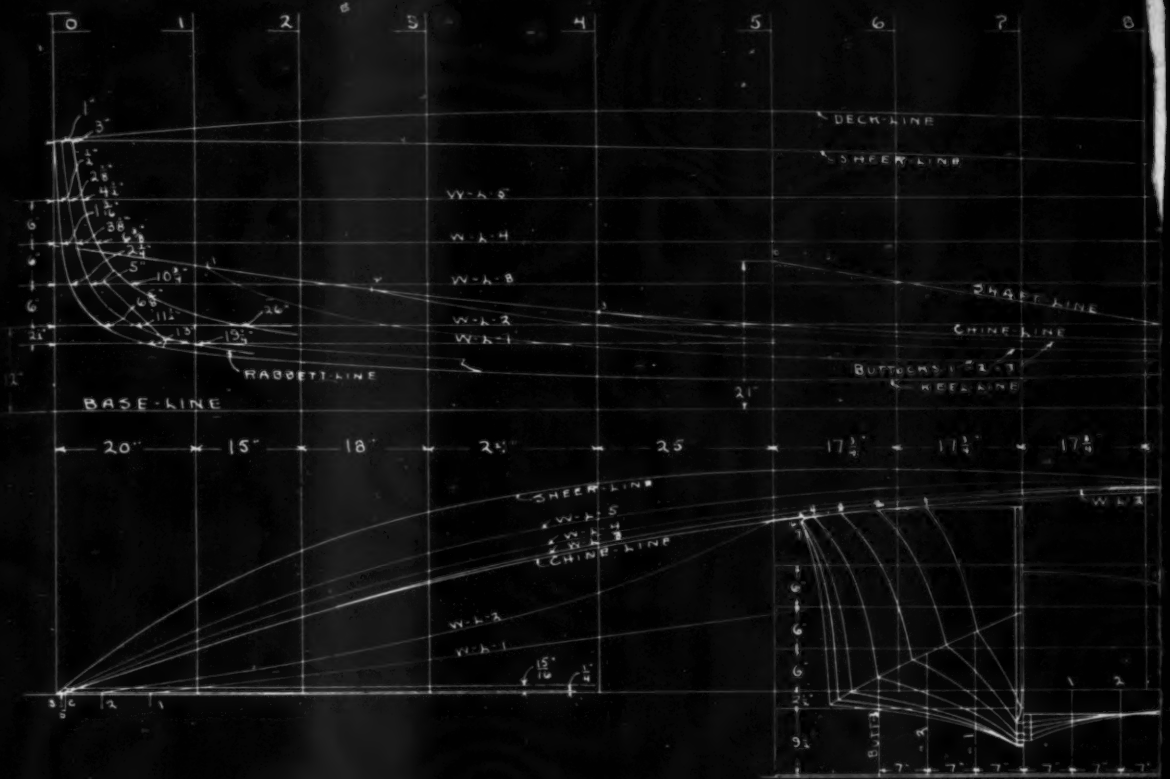
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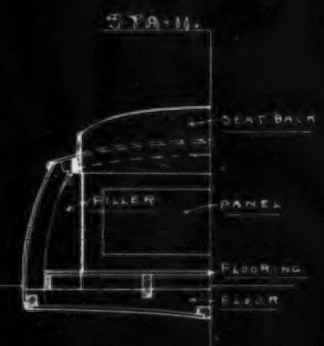
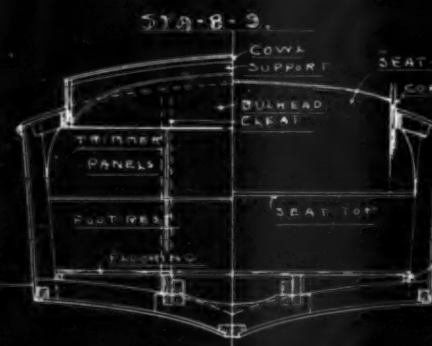
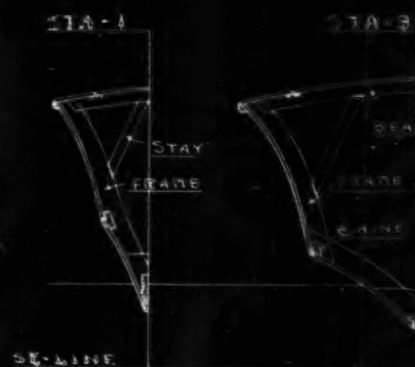
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119 W. 40th St New York

Complete How to Build Plans
by
John L. Hacker

SMALL MOTOR BOATS

Their Care, Construction and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for the April Prize Contest

1. Describe and illustrate an effective method of ventilation for a bridge deck or under cockpit installation of an engine.

Submitted by G. E. R., New York, N. Y.

2. Describe and illustrate a successful method of exhausting under water, on a boat of average speed, also discuss to what extent same will cause loss of power, if any.

Submitted by H. A. M., Philadelphia, Pa.

Checking up on the Propeller

Useful Thoughts and Devices for Correcting Faulty or Damaged Propellers and Restoring Them to Usefulness

Answers to the Following Question Published in the December Issue

"Explain and illustrate how you would check up the pitch of a bent propeller and how you would correct any faults."

Straightening a Bent Wheel

(The Prize-Winning Answer)

WHERE a propeller has been badly bent or damaged, the best method of repairing it is to send it back to the factory, as most of the manufacturers are making a specialty of this work, and the wheel is also put into perfect balance.

In some cases, however, this plan cannot be followed, and in some others where the damage is only slight, it is not necessary, therefore, the following will show how it can be done at home.

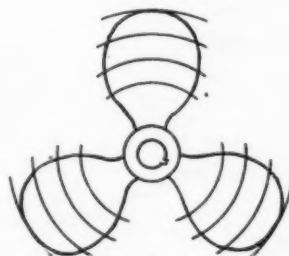
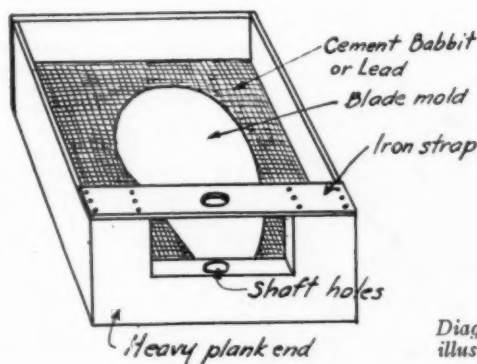
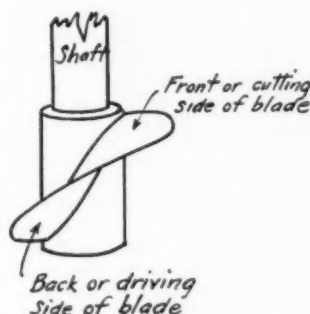
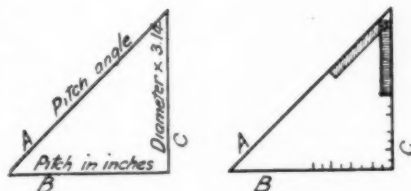
First, it is best to know what is to be done and why, then it is possible to make a better repair. Most propellers are true screw, that is, the blade angle next to the hub is much more rank than that at the blade tips, in order that each portion of the blade area will do an equal amount of work toward sending a column of water astern. You can readily see that the tips of the blades travel through, and act upon more water than that area close to the propeller hub; therefore, the angle at blade tip is less than that at the hub. Such being the case, it is necessary to start in at the hub and, by measuring and setting the pitch every inch out to the

blade tips, we get each blade into a gradual twist which will enter and go through the water with a minimum of disturbance or cavitation. A set of pitch diagrams, similar to the one illustrated, made to suit every inch of the blade area, will enable you to twist or hammer the bent blades

into their proper shape. To use these diagrams, line B runs parallel with the propeller shaft, while line A is the angle to which that portion of the blade must match. If the wheel has been removed from propeller shaft, another piece of shaft or a straight edge is slipped into the hub to take its place. Always start in at the hub and work out to blade tips, and use the back or driving side of blades when measuring or re-pitching. You will find there is a certain amount of curvature or cup on the driving side of the blades, and this must be kept there when repairing, otherwise, the propeller would have a tendency to throw the water off instead of getting a grip on it. This curve will vary with the different wheels, and at different diameter on the blades, yet by measuring a good or only slightly damaged blade, it can be readily ascertained. Never heat

bronze to bend it, as it will become brittle.

In making the actual repair, where there are only one or two blades slightly bent, a good method is to leave the propeller and shaft in place and turn until a good or undamaged blade is straight up and down and in back of deadwood or strut. Measure the distance back from the deadwood, first to the forward or cutting edge of the blade, then to the back or driving edge, doing this from the hub to the tip, every inch,

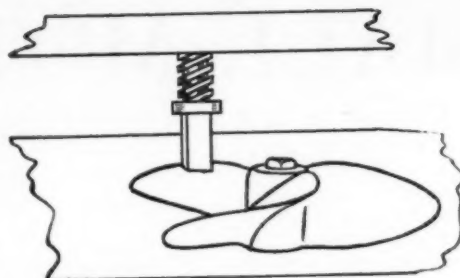


Diagrams prepared by V. L. S. to illustrate his article on propeller readjustment

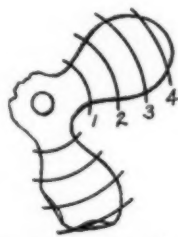
and keeping a record of these measurements. Then turn the propeller until one of the damaged blades is in this same position, check up the measurements and where they do not match, either by twisting with a large wrench or hammering with a soft metal or hardwood mallet, bring

this blade so its measurements will check with those of the first one, and so on until all blades are alike. If the blade has a sharp bend in one place, it is best to remove it from the propeller shaft, run another piece of shafting through hub, slip blade into a vice and by twisting with the piece of shaft the blade can easily be brought back to almost normal. After this has been done the propeller is placed back on propeller shaft in its original position and the finishing touches given with the hammer or wrench.

For the home repair job, the mold method is the best, and while it may take a little more time and cost a few cents, the result is an accurate job which will pay in the long run, especially on boats with high speed motors. Babbitt, lead or cement can be used in the box form for making the mold; however, cement will do very nicely if smoothed off. First make a heavy wooden box, large enough to hold one propeller blade and allowing plenty of clearance all around it, with a depth of from ten to twelve inches. One end is made of three or four inch oak, and a section is cut out the upper half of this end, as shown in illustration, this cut being wide enough to allow a blade to be shoved through it into the box, and the depth the same as the length of propeller hub. Across the top of this end, and bridging the cut, is a screw fastened piece of strap iron three inches wide, and $\frac{3}{16}$ of an inch in thickness, through the center of which has been drilled a hole the same diameter as that of your propeller shaft. Directly below the hole in the strap iron, drill another hole of similar diameter on the bottom of the cut-out section, this hole being about an inch deep. Get a piece of shaft the same diameter as the propeller shaft, and long enough to allow about two inches to protrude from both ends of propeller hub (in case hub is bored taper, a special piece of shaft will have to be turned or a bushing made for hub, so a straight piece of shaft can be slipped through it). Pick a blade which is in good shape, or which has been set to proper pitch, and insert this blade through hole in end of box with rounded or forward side of blade on the bottom, until the shaft hole in the hub lines up with upper and lower holes in box end. Slip short piece of shaft through these holes as well as the propeller hub, and make sure you have a neat fit, pour in cement, babbitt or lead only to the height where you get a good impression of the lower side of this propeller blade. Leave until the mold has set thoroughly, take out piece of shaft and remove propeller, insert one of the damaged blades and fasten into place with short shaft. Then by hammering with wooden or soft metal mallet, or even with a hammer and block of hard wood, the blade will be bent to conform with the mold, if the propeller is a three-bladed one, the third blade is put through this process, and the result is a propeller with all blades exactly alike in pitch and shape. This same stunt can be used to change pitch in a wheel to that desired, by getting one blade to the pitch desired,

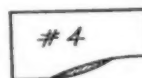
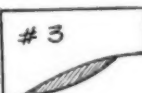
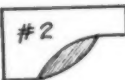


Blade straightened
in Arbor-Press



Stations marked
along blades

Templates suggested by
E. L. S. for checking up a
bent propeller



Templates fitted
to blade-sections
at stations

then making a mold if it, and hammering the other blades to fit the mold. Changing the pitch of a propeller is not recommended, however, except in cases where the owner is only using this propeller as a makeshift or as a test.

Deep dents made by striking rocks, etc., can be filled in with solder, and finished off smooth with a fine file.

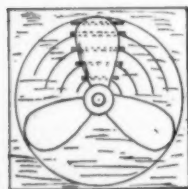
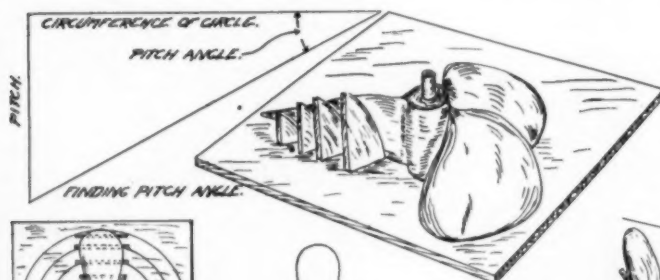
Where blades have been badly bent, look for signs of a fracture when straightening. Don't neglect your propeller, just because it is out of sight, as the efficiency of your outfit depends on its action. E. L. S., Wilmington, Del.

The Use of Propeller Templates

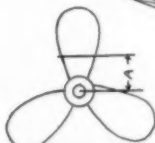
GRANTING that the propeller was selected advisedly as the one best suited to the boat and its power plant, there is no good reason for suspecting the

propeller as the cause of unsatisfactory performance of the boat, unless the propeller is known to be damaged. The indications of a bent propeller are, excessive vibration at the stern and a sudden drop in speed with the motor running as usual, and the indications will be much in evidence if the wheel has been bent to any great extent. It is the slightly damaged propeller that requires a careful checking to find its faults.

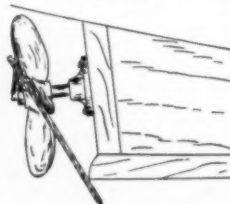
You can roughly check the truth of pitch, that is whether the pitch is the same in all blades, by the use of two light wooden



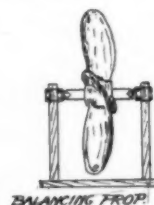
CHECKING
BLADE AREA.



PITCH = 6 1/4 TIMES A FOR 45° TRIANGLE.
PITCH = 3.62 TIMES A FOR 60° TRIANGLE.
MEASURING PROPELLER PITCH.



ROUGH TEST WITH BATTEN.



BALANCING PROP.

Several methods devised by W. B. M. for checking propeller alignment

(Continued on page 124)

Practical and Inexpensive Electric Light

Installation of Small Generator on a Boat will Increase the Comfort and Convenience of Life on Board

Answers to the Following Question Published in the December Issue

"Describe a practical and inexpensive lighting system which may be installed on the small motor boat by an owner with ordinary mechanical skill."

A Controlled Generator

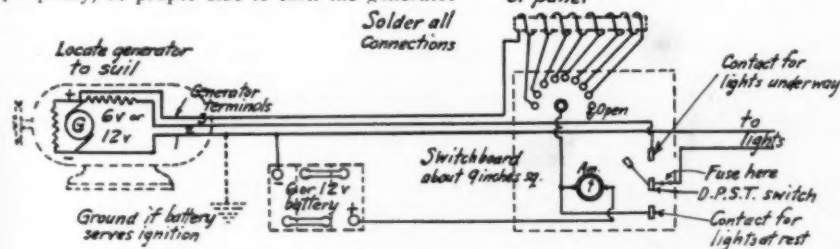
(The Prize-Winning Answer)

THE writer having tired of buying hot shot batteries and grown sick of lugging a storage battery for recharging, as the motor was not provided with a generator, installed the system here-in-after described. This system has been in use for three years and as yet it has been unnecessary to remove the storage battery for a midseason charge.

A trip to the auto wreckers netted one perfectly good six volt compound generator (\$5.00) and one good ammeter. An errand to a dealer in power sewing machines provided a split pulley and the proper length of small round belting (\$1.75). At the Radio store a panel about 9 x 9 inches, a fairly heavy switch arm and some switch points were obtained (about \$2.00 more). The junk box then gave up a piece of copper tube (any tube would do which would not burn when over heated) which was wrapped with asbestos and then wound with No. 14 iron wire, spaced to avoid short circuiting. The coil thus made was tapped at eight points and provides a regulating rheostat. Thus for less than ten dollars all material, exclusive of wire and storage battery, was obtained. Who wouldn't give ten dollars for a real light plant.

INSTALLATION.

Determine the proper direction of rotation of the generator as installation in the wrong direction may result later in the generator failing to build up. Mount the generator, providing some means of taking up slack in the belt occasionally. This mounting should be parallel with the shaft, on which is bolted the split pulley, of proper size to turn the generator

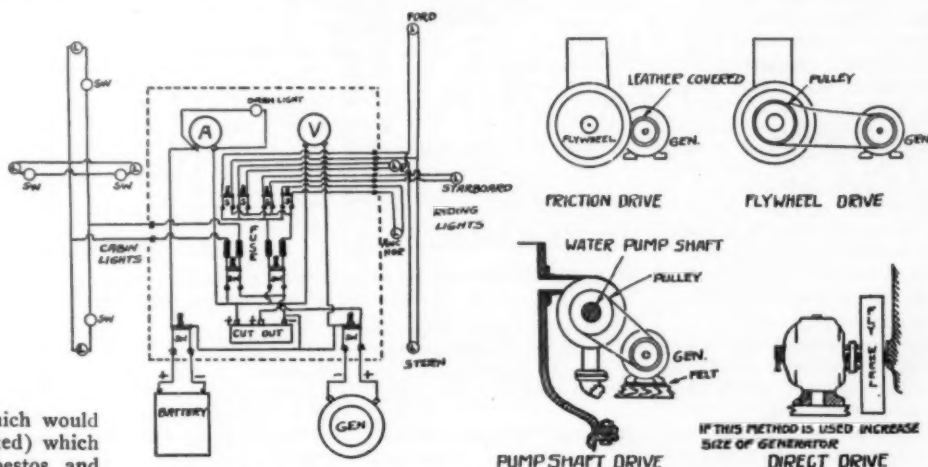


S. C. W. has provided a rheostat coil to control the generator output at its proper r. p. ms. at normal engine speeds.

The switch panel is then made up and mounted in a convenient space. The switch panel provides only an ammeter, the rheostat switch and a single pole, double throw switch.

OPERATION

As soon as the boat is under way the rheostat switch arm is closed to the proper contact for current charge to the battery as indicated by the ammeter. If lights are being used under way the double pole switch is thrown to the Compound contact of the double throw switch. This allows the use of running and cabin lights directly from the generator without interfering with the shunt or charging side, the battery therefore charging on night as well as day runs.



Wiring diagram and generator drive systems suggested by C. M. L.

Upon stopping the double throw switch is thrown to battery which will allow enjoyment of the energy stored up when under way. The rheostat switch must be thrown to open upon stopping as no reverse current relay has been provided to prevent the discharge of the battery through the generator armature when the motor is not turning over.

I believe the diagram herewith is self descriptive enough for any real motor boatman to follow successfully.

S. C. W., Cleveland, O.

An Inexpensive Outfit

INSTALLING an electric lighting plant on a boat is not a difficult matter. The first thing to do, is to find out the lighting requirements on the boat. If you have an engine equipped with a generator, the most important item is taken care of. In engines where no generator is built in, or where light requirements are greater than the regular generator can produce, a dynamo of a suitable capacity can be belted to the engine to produce additional current. Six or twelve volts may be used. For example, 4 lights are required, this system would need a 60 A. H. 6-volt storage battery, generator, to produce about 40 candlepower lights, a 12 candlepower seachlight, and three 6-volt 6 candlepower lights and furnishing

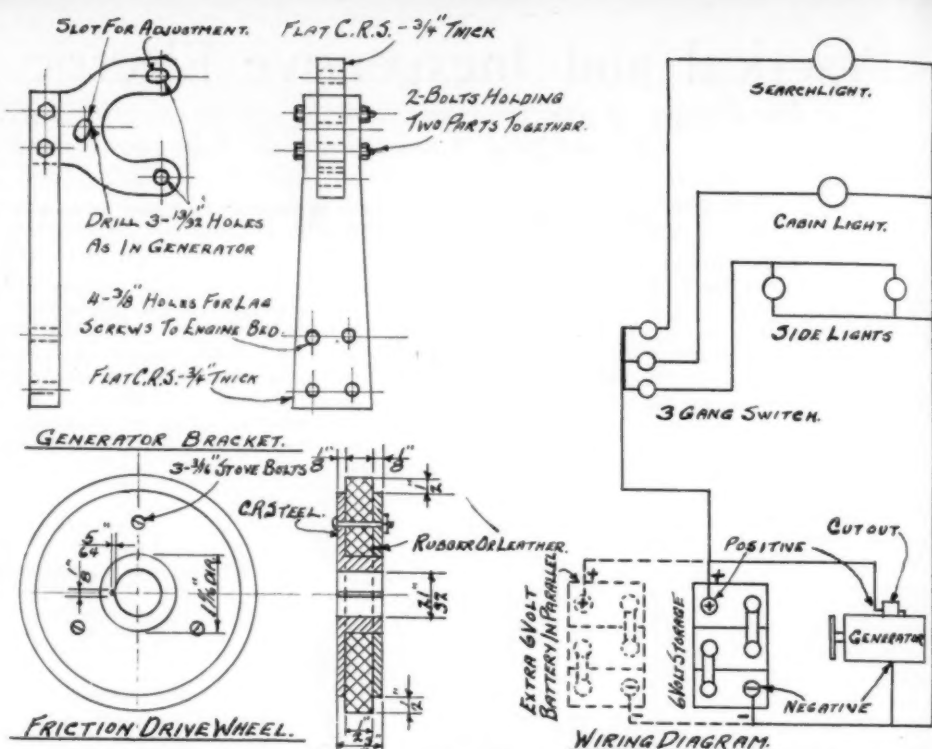
current for ignition purposes. If no ignition current is used an additional 6 volt 6 candlepower light can be added.

Again, 10 lights are required, this system would need a 100 A. H. 6 volt battery, generator to furnish current for ignition and 50 candlepower. Use a 20 candlepower 6 volt light for the seachlight. Four sailing lights, to use 2 candlepower 6 volt lights each. Four 6 volt 6 candlepower lights for cabin use. If no ignition current is used an additional 6 volt 10 candlepower light can be added.

The generator is the heart of the unit and bear in mind that the voltage of the charging generator must exceed the maximum voltage of the storage battery, otherwise it will not be able to properly charge the battery. Use a felt pad under the generator mounting to deaden all noise.

Next to the generator the switchboard occupies an important place. On it are mounted the ammeter, voltmeter, cutout which automatically shuts off generator current when battery is fully charged or automatically connects the generator when the current in the battery falls below a certain point. Fuses to take care of an overload in the circuit and knife switches for running lights, etc. The switchboard can be made from hard rubber which is easy to cut and drill, Bakelite or Formica are tougher and harder to work on. A 1/4-inch thickness of hard rubber would do, and the size would depend entirely upon the number of instruments, etc., that are placed on the board. For light use ordinary bayonet base and duplex wire about a 10 or 12 B. & S. gauge. For heavier leads, such as from generator to switchboard, use a No. 4 B. & S. stranded cable. Ordinary snap switches can be used, which can be purchased for a very reasonable price. If you have to string wires in inaccessible places, or where they will be subject to a lot of oil, grease and friction, I would suggest armored cable.

A few suggestions on the care of the battery will not be out of place. Grease terminals to keep out corrosion. The positive of the battery must be connected to the positive of the generator, negative terminal of the battery



P. W. C. has devised an ingenious system using the generator unit which is furnished with one of our most popular cars

must be connected to the negative of the generator, never otherwise. A fully charged cell will register 2.1 volts. It is discharged when the voltage drops to 1.7 volts per cell. Get a hydrometer and use it. The specific gravity of a cell varies from 1.280 to 1.300. A battery is discharged when the hydrometer reads 1.150. Use only distilled water kept in a glass jar.

Any of the given described arrangements can be installed at a reasonable cost, giving service and satisfaction to the owner of the boat.

C. M. L., Detroit, Michigan.

Lighting System for Small Boats

THE most efficient small lighting plant that is really practical and inexpensive is a 6 volt system using well known automobile parts. The first thing is a 6 volt, 11 plate storage battery as used on light cars. This can be obtained for \$12.00 to \$25.00 according to the make. I never pay over \$12.00 for a new battery of this size and have fine results. One of these batteries will carry at least three 21 or 32 candlepower auto bulbs and four or five 4 candlepower bulbs. There are two types, double and single contact. The double contact should be used exclusively. The bulbs range from about 30 to 60 cents each. The sockets can be obtained at an automobile supply store in almost any style; flush, capped, so as to swing from ceiling or any style that suits the individual case.

(Continued on page 124)

Rules for the Prize Contest

ANSWERS to the above questions for the April issue, addressed to the editor of *Motor Boating*, 119 West 40th St., New York, must be (a) in our hands on or before February 15, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the sender's name and address.

The name will be withheld and initials used. QUESTIONS for the next contest must reach us on or before February 10. The editor reserves the right to make such changes and suggestions in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions on page 33, any article or articles sold by an advertiser advertising in the current issue of *Motor Boating* of which the advertised price does not exceed \$25, or a credit of \$25, on any article which

sells for more than that amount. There are two prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer both.

For answers we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of *Motor Boating* of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

Yard and Shop

Notes of Interest to Both Owner and Manufacturer

The S. A. E. Meeting

During the week of the Motor Boat Show many meetings of affiliated societies were held. Perhaps one of the most interesting and instructive of these was that of the S. A. E. which was held on the morning of January 9. George F. Crouch, the naval architect, read a paper in which he bespoke the co-operation of engine designers and naval architects to a greater extent than has been the custom heretofore. Many points of engine design are still decidedly faulty from the point of view of the engineer who must take care of the installation and operation in the finished hull. Among the topics brought out was the insufficient clearance at the after end of the engine bed, and also the matter of engine controls. The prevailing practice is to provide a few little bell cranks on the engine to handle the controls, and the builder is left to devise ways and means to transfer his motions from the steering position to the engine, as best he can. Another point brought out was a plea for greater uniformity in the exhaust pipe flanges. It will be well worth every engineer's time to give careful attention to this paper which will be published in the proceedings of the S. A. E. in due course.

Following Mr. Crouch, Captain Quincy B. Newman, Engineer of the U. S. Coast Guard, presented a very interesting paper, dealing with the design of the tentative fleet of Government vessels designed to stop the illegal importation of contraband merchandise. These boats, of which a matter of 225 odd will be 75-foot sea-going cruisers powered with engines of about 400 h.p. are designed to withstand the heavy seas off the coast, and also to be able to maintain their station for weeks at a time. While it is not intended that these vessels be abnormally fast, a speed of 18 m.p.h. is looked for, and

Important Events, 1924

February 21 and 22 Regatta of Palm Beach Yacht Club, Palm Beach, Florida.

March 7 and 8—Annual Southern Regatta, Flamingo Course, Miami and Miami Beach, Florida. (All races two heats.)

2:00 P. M.—Express Cruisers, 10 miles.

2:35 P. M.—Gentlemen's Runabout Class, 30 miles, open to displacement boats of over 25 feet in length powered with motors of not over 825 cubic inches piston displacement. (Qualifying speed: 35 m.p.h.)

3:25 P. M.—Hydroplane Class, 20 miles, open to hydroplanes with motors of not over 725 cubic inches. (Qualifying speed: 50 m.p.h.)

4:00 P. M.—Sweepstakes Class, 40 miles, open to displacement boats of over 25 feet in length powered with motors of not over 1,350 cubic inches and displacement boats of over 32 feet in length. (Qualifying speed: 40 m.p.h.)

March 15 and 16—Regatta of Habana Yacht Club, Havana, Cuba. (Same classes as at Miami.)

April 25-27—Regatta New Orleans Speed Boat Association, Lake Pontchartrain, La. Mississippi Valley Power Boat Association.

June 20-22—New York to Atlantic City and return race, Columbia Yacht Club, New York, N. Y.

July 3—Express Cruiser Championship, Middletown Yacht Club, Middletown, Conn., to Sachem's Head.

July 5—Express Cruiser Championship, Sachem's Head, Conn., to Lloyd's Harbor, Long Island.

July 3-6—Annual Regatta, Mississippi Valley Power Boat Association, Oshkosh, Wis.

July 31—Long Distance Ocean Championship for James Craig Trophy, Columbia Yacht Club, New York, to Shelter Island Yacht Club.

(Course outside Long Island)

July 31—Cruiser Race for MoToR Boating Trophy, Long Island Sound, Orienta Yacht Club, Mamaroneck, N. Y., to Shelter Island Yacht Club.

August 2—Handicap Cruiser Championship of America, Shelter Island Yacht Club.

August 14-16—Annual Regatta of Buffalo Launch Club, Buffalo, N. Y.

August 30-Sept. 1—Annual Gold Cup Regatta, Detroit Yacht Club, Detroit, Mich.



Major William Whistler, a speedy 35-foot inspection craft designed by the U. S. Engineer Corps of Chicago, and built by the Richardson Boat Company, North Tonawanda, New York. A 200 h.p. Hall-Scott engine drives the boat at 24 miles, and several duplicates are under construction

the addition of a one-pounder gun on the forward deck will serve to overtake any craft which may not stop promptly when called upon.

Smaller boats of lesser capacity are also provided for in the proposed program and these are to be 36 and 30 feet in size. The larger of these are to have a limited accommodation for small crews, but are not intended to stay on their stations for long periods at a time. The power plants for these are to be something between 150 and 180 h.p., and accommodations will be provided for the crew. The smaller boat is to be 30 feet in length but will be quite fast also, but is not intended for more severe service than that called for in cruising about the entrances to inlets and rivers, and within a reasonable distance of its base of supplies.

Naturally this entire program hinges very decidedly on the action of Congress in appropriating funds for this construction. If the necessary funds are forthcoming, the department will start at once with its building program, and boat builders and engine plants will do well to keep thoroughly informed in the matter.

Electricity in Films

It was recently our pleasure to witness a showing of a technical motion picture film produced by the North East Electric Company of Rochester, which had for its purpose the illustrating of the complications in the ordinary electric system as applied to the modern automobile and marine engine installation. The film was divided into several groups, and among the topics especially treated was one showing how the generator works, and the starting motor starts. Another reel was devoted to the combined unit, the starter generator, which performs both the generating and starting functions in one machine. The matter of ignition was also well demonstrated, and the timing and proper dis-

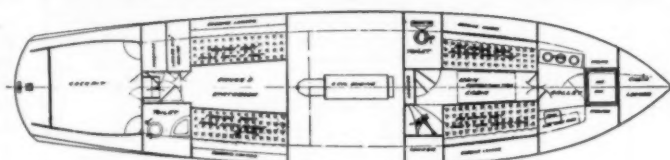
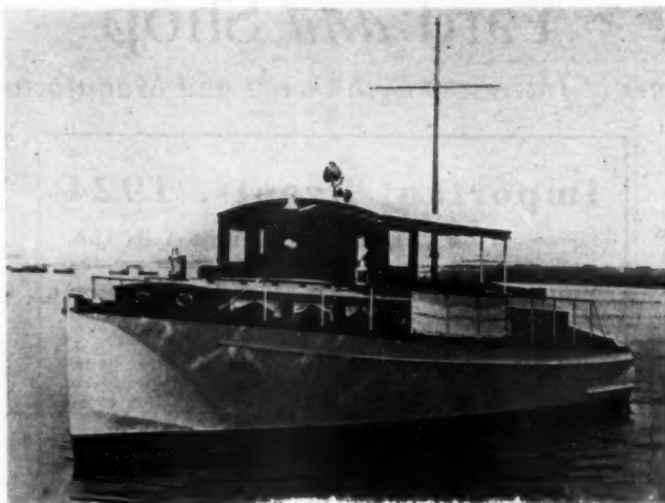
tribution of the electric spark was made so clear that even a child could understand the process. The method of showing the path of an electric current was interesting. The method adopted in the animated cartoon was followed and a dotted line was made to travel through the wires, indicating clearly where the current started, where it went to, and how it returned. These films are available upon request for exhibition purposes and possibly the larger yacht clubs or service plants will find it profitable to arrange for a showing of these films for the instruction of their membership or help as the case may be.

Le Nevix

This is not the name of a new drink but is an instrument designed to tell instantly how many gallons or inches of gasoline, water, or oil, is in any tank located at a remote point from the observer. It is a French device and standard equipment on most high priced cars in France, and is so arranged that it will give you the correct reading of the volume of fluid in any tank. It is possible to check the accuracy of the supply when buying fuel and also to check the consumption per mile or per hour by means of this instrument. It is arranged to be installed on tanks up to 40 inches in diameter or depth.

Rotary Pumps

A clever little pump was shown at the Motor Boat Show by the Rotor Pump Works of Brooklyn, N. Y. This pump seemed to be a very efficient little unit operating without gears and very quiet when working. It is able to produce a vacuum equivalent to 25 inches of mercury, and also maintain a pressure on the discharge side of



Standardized cruiser construction is gaining popularity in the West coast. For several years past the Seacraft Corporation at Wilmington, Calif. have been building the 45-foot cruiser shown above as a standardized product. It is regularly equipped with a 6 cylinder model E-6 Scripps marine engine.

Entries for Miami and Miami Beach Races Flamingo Course, Biscayne Bay, Florida--March 7-8, 1924 and at Havana, Cuba, March 15-16, 1924.

SWEEPSTAKES — LIBERTY CLASS

Open to displacement boats of over 25 feet in length, powered with motors of not over 1350 cubic inches and displacement boats of over 32 feet in length powered with motors of not over 1650 cubic inches piston displacement.

(Qualifying speed: 40 miles an hour)

BOAT	OWNER AND ADDRESS
Adieu II	Webb Jay, Little River, Florida
Musketeer	Horace Dodge, Detroit, Michigan
Baby Cub	Howard Lyons, New York, N. Y.
Sue J.	Webb Jay, Little River, Florida
Peerless Irene	V. A. Searles, Palm Beach, Florida
Nine Ninety Nine	Edsel Ford, Detroit, Michigan
Adieu I	J. A. Mellish, New York, N. Y.
Mary	E. H. R. Green, Terrell, Texas
Miss Mary	Ed. Grimm, Buffalo, N. Y.
Jerry	J. T. McCarthy, Detroit, Michigan
Bear Cat III	E. M. Gregory, Detroit, Michigan
Bear Cat IV	Wilbur Young, New York, N. Y.
Wilgold	J. A. Williams, Buffalo, N. Y.

GENTLEMAN'S RUNABOUT CLASS

Open to displacement boats of over 25 feet length, powered with motors of not over 825 cubic inches piston displacement.

(Qualifying speed: 35 miles an hour)

Miss Mary	Ed. Grimm, Buffalo, N. Y.
Bear Cat I	Ed. Gregory, Detroit, Michigan
Jerry	J. T. McCarthy, Detroit, Michigan
Bear Cat II	Wilbur Young, New York, N. Y.
Bear Cat III	E. M. Gregory, Detroit, Michigan
Bear Cat IV	Wilbur Young, New York, N. Y.
Wilgold	J. A. Williams, Buffalo, N. Y.

HYDROPLANE CLASS

Open to all hydroplanes complying with M. V. P. B. A. 725 cubic inch class restrictions.

(Qualifying speed: 50 miles an hour)

Elanar	W. H. Ruhaak, Peoria, Illinois
Meteor VI	W. B. Wilde, Peoria, Illinois
Meteor VII	W. B. Wilde, Peoria, Illinois
Dots	L. R. VanSant, Peoria, Illinois

75 pounds or more. It is peculiarly well adapted for circulation purposes on marine engines, and is also applicable to bilge and deck pump service. They are designed to be directly connected to an electric motor and it is stated that the current consumption is moderate and well within the capacity of any good storage battery.

Commodore Schantz Heads Detroit Club

The annual election of the Detroit Yacht Club not long ago resulted in the election of A. A. Schantz for the third time. In this respect he shares honors with Gar Wood who has also been at the head of this Club for three different terms. Mr. Wood, the retiring Commodore, due to the condition of his health, did not run for the office this time. The office of Vice-Commodore will be filled by Otto F. Barthel and former Secretary E. J. Stafford was elected to the Rear Commodore's chair.

Commodore Schantz is one of the most popular members of the club and has filled the office of Commodore on two previous occasions in 1918 and 1919. Besides his many activities he still finds time to serve as a member of the Gold Cup Committee which will promote the races in Detroit this summer.

Inside Route Charts to Key West

For the convenience of yachtsmen and owners of small craft using the inland waterways from Norfolk, Virginia, to Key West, Florida, the U. S. Coast and Geodetic Survey is about to publish a new series of charts covering this route.

(Continued on page 55)

The Valspar Boiling Water Test

at the Motor Boat Show, in New York

HERE is an exhibit which attracted a great deal of attention at the Motor Boat show, held in New York, at the Grand Central Palace, January 4th—12th. It was one of several displays which demonstrated once again the supreme serviceability of Valspar Varnish.

Above, seven panels of varnished mahogany were placed under faucets of running water, kept at boiling point by electricity.

Below, seven similar panels used at last year's show.

Three in each set of panels were varnished with high-grade floor varnishes—three others with well-known spar varnishes. The center panel in each case was *Valsparred*.



The seven top panels are placed under running hot water. The seven bottom panels show result after test in last year's show.

And this is the test—

The boiling water ran continuously over the freshly varnished panels from 10 a.m. to 11 p.m. every day during the show. Before long the floor-varnishes began to turn white—a sure sign that their life and protective quality were being destroyed. Then, one by one, the spar-varnishes also began to show the effects of this severe test.

But the Valsparred panel was unchanged—its original clearness and beautiful finish remained unaffected to the end.

Thousands of people witnessed this test—many of them returning day

after day to watch its progress. Thousands more will see it repeated in various parts of the country during the coming months.

Valspar is also proof against salt water, wood alcohol, strong ammonia, powerful acids and other destructive elements.

All prove conclusively what boat-builders, airplane manufacturers, railroads, and many others, discovered long ago—that *Valspar is the only Varnish that never turns white*—that Valspar Varnish is the most durable and serviceable varnish that can be obtained.

This coupon is worth 20 cents to \$1.20

 <p>VALENTINE'S VALSPAR The Varnish That Won't Turn White</p>	<p> Valspar . . . <input type="checkbox"/> Valspar Bronze Bottom Paint . <input type="checkbox"/> Valspar Aluminum Paint . <input type="checkbox"/> Valspar-Yacht White . . . <input type="checkbox"/> Valspar Enamel State Color . <input type="checkbox"/> Valspar Stain . <input type="checkbox"/> State Color . . . <input type="checkbox"/> </p>	<p>VALENTINE & COMPANY 460 Fourth Ave., New York</p> <p>I enclose dealer's name and stamps, amounting to 20c for each 40c sample can checked at left. (Only one sample of each product supplied at this special price. Write plainly.)</p> <p> Dealer's Name Dealer's Address Your Name Address M. 3 2-24 </p>
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When My Ship Comes In

A Few Thoughts on Yachting in General
and Steam Yachts in Particular

By Walter F. Bailey

THE ownership of a large pleasure yacht is looked on by the proletariat as the last word in plutocracy. Some people are born to yachts, some achieve them in later life, but in either case, the ownership is taken as outward evidence of a generous checkbook and a fine disregard for the high cost of living.

Now it is true that yachting is not altogether an expensive form of recreation. But, on the other hand, it's reputed extravagance is somewhat overrated when you come to figure the cost down in actual dollars and consider the value one gets for his investment.

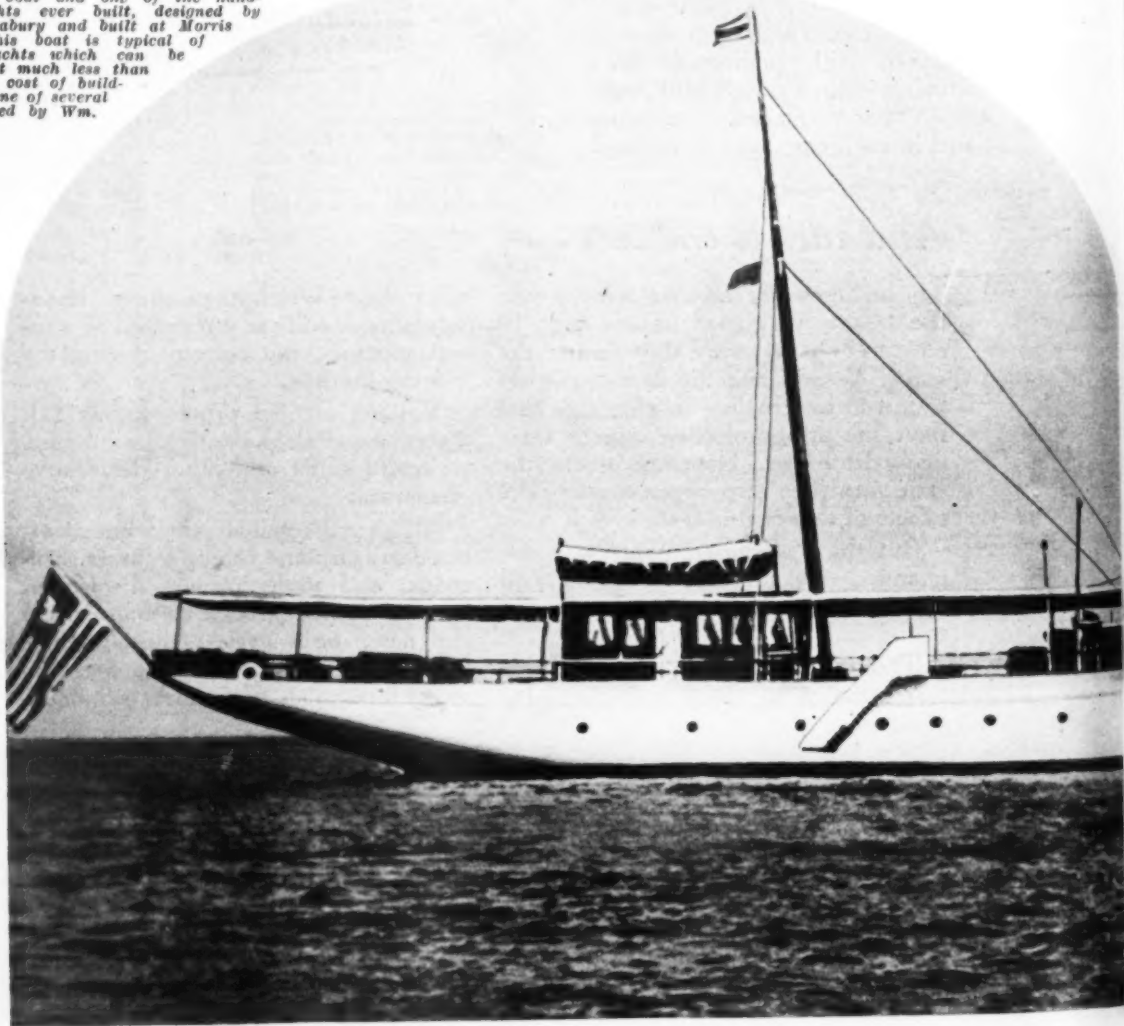
This combination of a country home, a seashore cottage, a portable hotel and private transportation system that you call a yacht, is the source of so many kinds of entertainment and recreation, not only for the owner and his family, but for a large circle of friends as well, that its cost cannot fairly be measured by the same standards as other more limited or more selfish pastimes

This wide range in the cost of all things afloat is matched by a somewhat similar range of cost in the class known as yachts, by which term the average man understands you to mean a privately owned pleasure boat of something over seventy-five feet in length, whether propelled by sail or steam, oil or gasoline engines. Of such boats there are usually enough on the market so that the prospective buyer can find about what he wants all built and ready for immediate service without the delay of having one built, incidentally escaping the tithe that Uncle Sam collects on all new boats

The other day I was over at the Tebo Yacht Basin Company in Brooklyn, which is the winter home of most of the fine large yachts in New York waters. They have over fifty private yachts in storage afloat, most of them decked over with detachable winter covers so that the decks and deckhouses are not exposed to the rigors of the weather.

Take for example the *Levanter* which is one of several

*S. Y. LEVANTER, 131'x100'x17'x6" 5".
A 14 knot boat and one of the handsomest yachts ever built, designed by Chas. L. Seabury and built at Morris Heights. This boat is typical of the fine yachts which can be purchased at much less than the present cost of building. It is one of several yachts owned by Wm. H. Todd.*



yachts privately owned by Mr. Wm. H. Todd, President of the great Todd Shipyards Corporation. This organization operates seven big shipyards throughout the country of which the Tebo Yacht Basin is one unit. Mr. Todd owns several yachts at a time as other men own several cars. And I believe it is logical to assume that the employees of his yards, expert ship carpenters, machinists and maintenance men, take pride in putting their best efforts on the boats that will come under the direct observation of their chief.

The Levanter is a handsome ship of composite construction, designed by the late Chas. L. Seabury and built by the Gas Engine and Power Co. of Morris Heights, New York, now the Consolidated Shipbuilding Corporation. Of course it was a beautifully built boat in the first place, and excellent care has kept it in fine condition through several seasons of service. It would be a particular owner indeed who would ask anything finer in a boat of its size.

This yacht is 131 ft. overall, 109 ft. on the waterline, with 17 ft. beam and 6 ft. 5 in. draft. It is driven at 14 knots by a triple expansion Seabury steam engine and has all accommodations and conveniences for a large party. The owner's quarters aft consist of a big double stateroom, five guest staterooms and two bathrooms, all finished in mahogany and white enamel. These staterooms do not suggest the usual crowded quarters of a boat, with their ample proportions and full size berths.

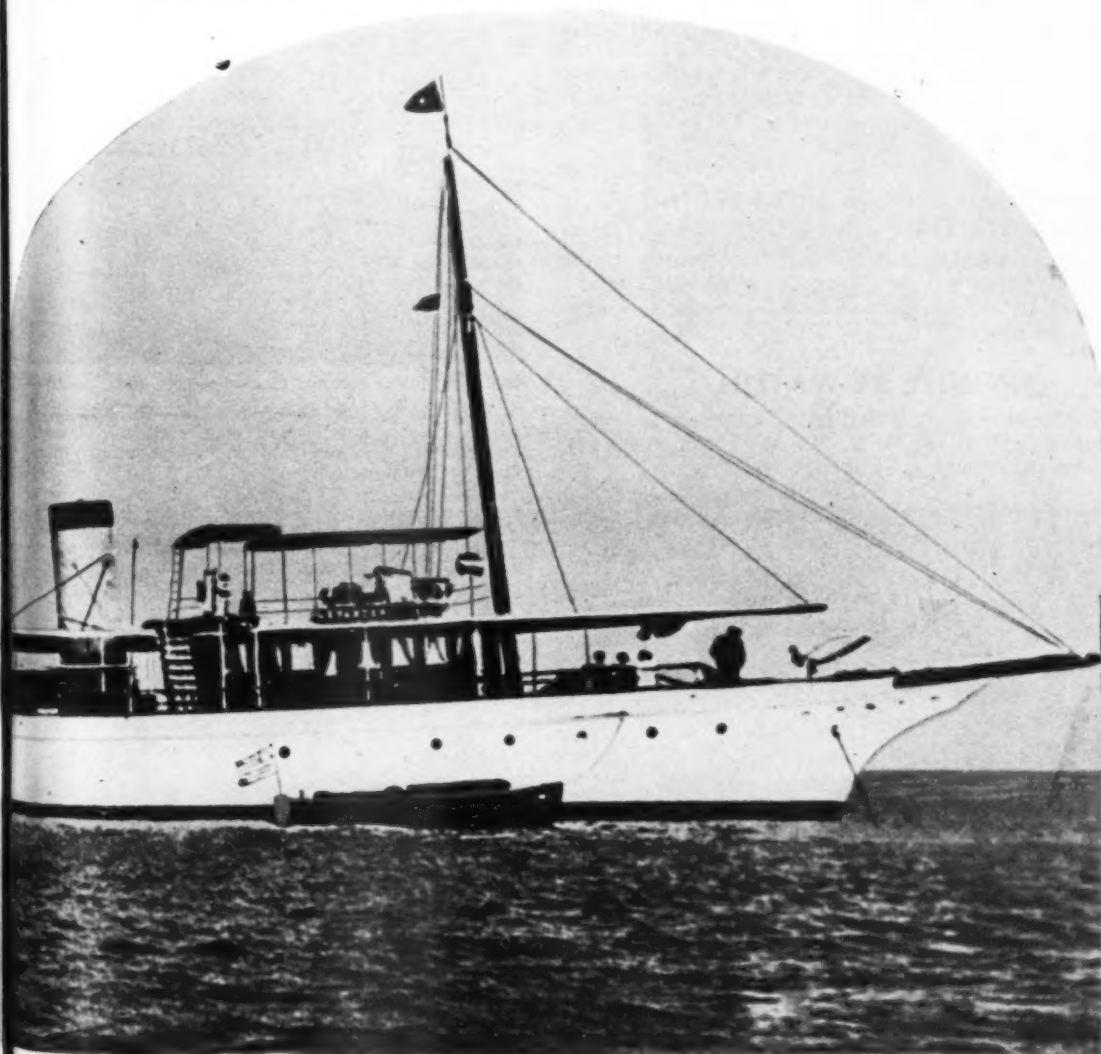
The after deckhouse is a sort of social hall while the

large forward deckhouse is the dining saloon, with built in buffets and a big extension dining table that accommodates a very large party without crowding. The service pantry back of the dining saloon connects with the galley immediately below. Crew's quarters are in the forecabin below decks, with open bunks for eight in addition to three staterooms for the officers and engineers.

What I like particularly about the Levanter is the great amount of deck space, all under awnings and big enough to move about as freely as on land. With plenty of cushioned seats, chairs and settees here and there, you can find real comfort and plenty of variety to relieve the monotony for the landlubbers of the party.

The Levanter is now on the market and can be bought for a fraction of the original cost or of the present cost of building. In other words, it is a real bargain because it offers all the service and pleasure possibilities of a new boat at comparatively small expense and without the excessive tax to pay. Of course it is completely equipped with all sorts of gear and furniture, two power launches, three dinghys and all the extras that amount to a considerable item when they must be purchased separately. And it is kept in such condition that it could be put in commission on a few days' notice.

Inquiries for price and further information should be addressed to Mr. C. H. M. Jones, care of Todd Shipyards Corporation, 25 Broadway, New York City, or to your own broker.



A Standardized High Speed Commuter!

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A 50 FT. TWIN SCREW MOTOR YACHT, operating free of vibration, with remarkable seagoing qualities. Developed from famous GAR JR. II., which is officially credited with cruiser speed record of 44.6 miles per hour, and which has covered OVER 60,000 miles WITHOUT A BREAKDOWN!

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builders of these remarkable cruisers. Substantially constructed in high-class manner. Hull double planked; outer skin of mahogany. Crew quarters forward; owner's cabin, galley and toilet room aft.

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The roomy bridge deck and forward cockpit, seat 12 persons

Power plant consists of two twin-six "Liberty" motors developing 450 H.P. each, perfect in balance and control, absolutely reliable, and practically automatic in operation.



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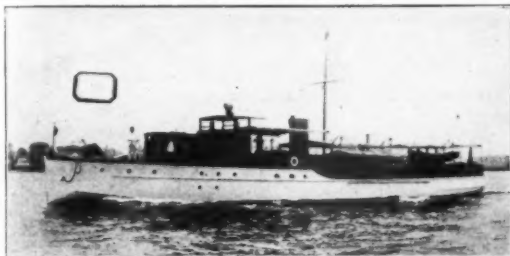
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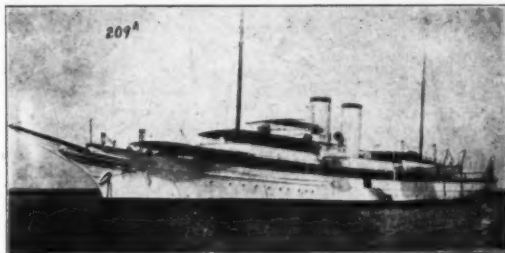
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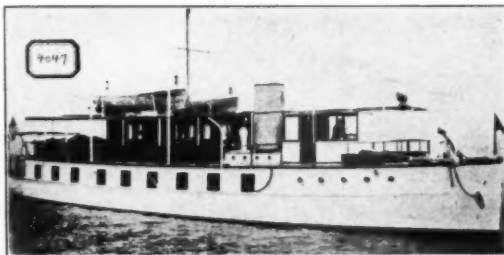
On this page are shown a few representative yachts selected from our large lists. Should none appeal kindly acquaint us with your requirements. Full information regarding costs to build, purchase or charter yachts of all types gladly furnished.



No. 4164—For Sale—Up-to-date 93 ft. twin-screw cruising motor yacht. Built 1921. Construction unusually heavy and of highest class. Speed 12 to 14 miles; two 80-115 H.P. Winton motors. Dining saloon in deckhouse forward; two double and one single staterooms, bath and two toilets below aft. Able, handsome, comfortable cruiser. Interior finish mahogany and ivory enamel. Cox & Stevens, 25 Broadway, New York.



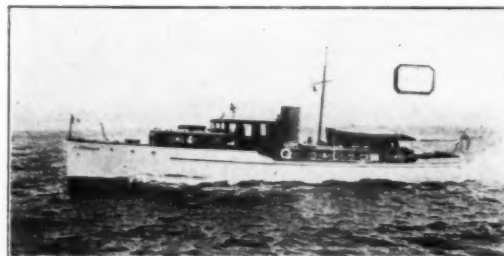
No. 209—For Sale or Charter—Large, sea-going steam yacht. Palatial accommodation. Unusual opportunity. Several similar larger and smaller available craft. Cox & Stevens, 25 Broadway, New York.



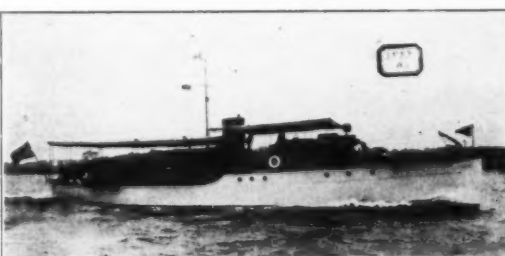
No. 4047—For Sale or Charter—Twin screw motor houseboat. 85' x 18' x 3.3' Winton motors. Four staterooms, two baths and three toilets below. Deckhouse 25' long, containing combination dining saloon and living room. Luxuriously fitted and furnished. All conveniences. Cox & Stevens, 25 Broadway, New York.



No. 4233—For Sale or Charter—Practically new, twin screw motor houseboat, 100 ft. x 20 ft. x 3 ft. draft. Speed 10-11 miles. Exceptional accommodation includes five staterooms, three bath and toilet rooms. Dining room and library in deckhouse. Tastefully furnished throughout. Large deck space. Best large houseboat available in Florida waters. Cox & Stevens, 25 Broadway, New York.



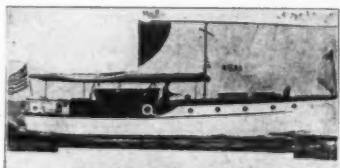
No. 4048—For Sale—Handsome, fast, twin screw cruiser; 64' x 12.6' x 3 ft., 6 in. draft. Speed up to 19 miles; two 8 cyl. motors; electric starters. Enclosed bridge with full motor controls. Dining saloon, two double staterooms, toilet room, galley, etc. Probably roomiest boat of type and size available. Price low. Cox & Stevens, 25 Broadway, New York.



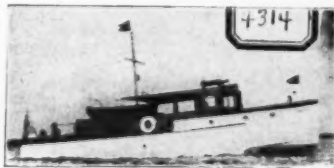
No. 3533—Bargain—Modern twin screw motor yacht, 72' x 12' x 3.6'. Built 1917. Speed 13-14 miles. Two 125 H.P., 6 cylinder Winton motors. Deck dining saloon forward, two double staterooms, bath and two toilets aft. All conveniences. Very low figure accepted for quick sale. Cox & Stevens, 25 Broadway, New York.



No. 2714—FOR SALE—Immediate delivery, roomy 62 ft. cruising power yacht. Speed 11 miles; 60 H.P. motor, double stateroom, two saloons, bath and toilet room. Excellent condition. Bargain. Cox & Stevens, 25 Broadway, New York.



No. 2830—For Sale—Attractive 50' bridge deck cruiser in excellent condition. Two cabins, large afterdeck. Equipped with 50 H.P. heavy duty motor. Speed 11 miles. In commission. Cox & Stevens, 25 Broadway, New York.



No. 4314—For Sale—40' V bottom, bridge deck cruiser. Excellent seaboat and very well constructed. Speed up to 15 miles. Large deck space with enclosed bridge from which motor is controlled. Price attractive. Cox & Stevens, 25 Broadway, New York.

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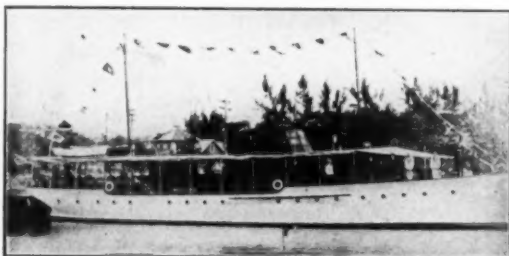
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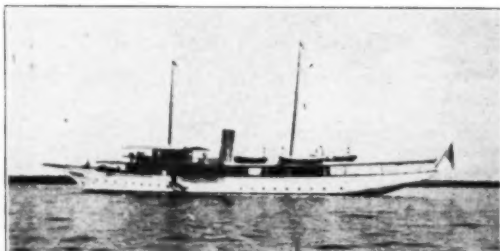
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No. 7866—For sale—Best purchase for quality at reasonable price. 93' x 18' x 3' 10". Desirable for Florida and Cuba. Twin screw, handsome, able cruiser in commission. Owner abroad. Built 1918 by prominent firm. Speedway motors. Speed 12-14 miles. Teak deck trim, three double, one single staterooms, bath, deck saloon. Large crew quarters. Condition 100 per cent. Complete. Henry J. Gielow, Inc., 25 West 43d St., New York City.



No. 9536—For Sale or Charter—Oil burning steam yacht, seven staterooms, three baths, large social hall and dining saloon. In splendid shape; can be ready for sea on short notice. Henry J. Gielow, Inc., 25 West 43d St., New York City.



No. 8310—For Sale—Most desirable cruising houseboat, giving exceptional accommodations. 45' x 13' x 3'. Built best manner in 1921. Actual speed 9 miles. Double and single stateroom, saloon and deck saloon. Sleeps six. Crew stateroom forward. Delco plant, completely equipped. Near New York. Henry J. Gielow, Inc., 25 West 43d St., New York City.



No. 8014—For Sale—Located Florida. Might charter season. 52' x 14' x 3'. Built 1919 of best materials and finish. 50 H.P. standard motor. Speed 9-10 miles. Double and single stateroom, deck saloon and lower saloon. Sleeps 5-8. Completely found, all fine condition. Anxious to sell. Price reasonable. Hot water heated. Henry J. Gielow, Inc., 25 West 43d St., New York City.



8294—For Sale—65' twin screw power yacht. New 1923. Two staterooms, bath, large deck house. Mahogany and white enamel interior. Great Lakes location. Henry J. Gielow, Inc., 25 West 43d St., New York City.



No. 7056—For Sale—Charter—Attractive cruiser with houseboat accommodations, having three double staterooms, large deck house and lower saloon. Accommodates 6-9. Two 20th Century motors. Speed 10-11 miles. Bath, two toilets in owner's quarters. Dimensions are 58' x 16' 6" x 3' 0". Hot water heat, electric plant. Completely equipped for cruising. Economical to run with crew of five men. Reasonable price. Henry J. Gielow, Inc., 25 West 43d St., New York City.



7843—For Sale—93' twin screw offshore cruiser. Built 1921. Winton motors. Three staterooms, bathrooms, saloon and deck house. Wonderful seaboard. Good seaboard. Henry J. Gielow, Inc., 25 West 43d St., New York City.



No. 8086—Available for Southern charter, modern twin screw cruising houseboat. Built 1920. Speed 11-12 miles. Four double staterooms, two bathrooms. Large deck house. Hot water heated. All conveniences. Henry J. Gielow, Inc., 25 West 43d St., New York City.

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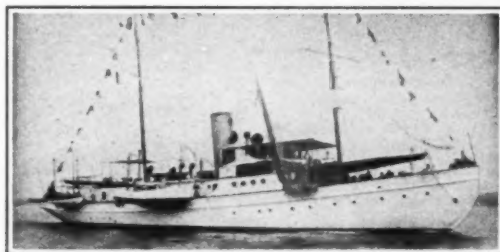
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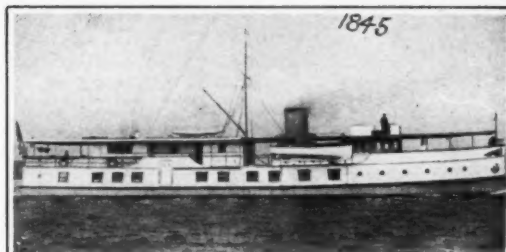
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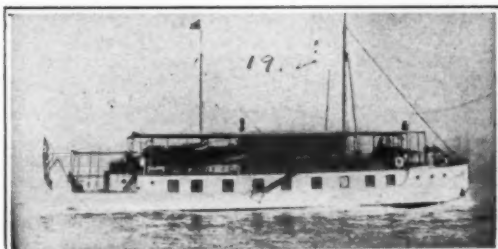
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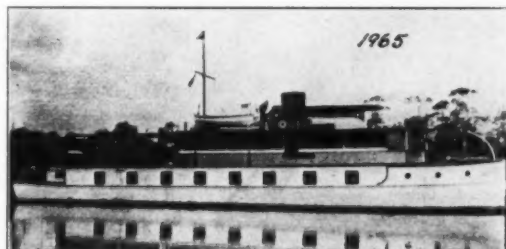
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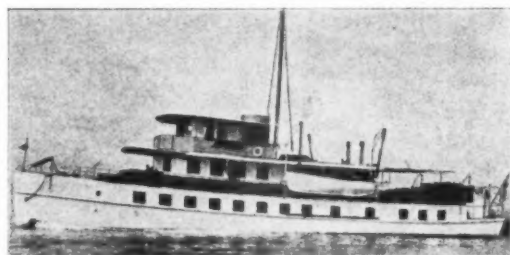
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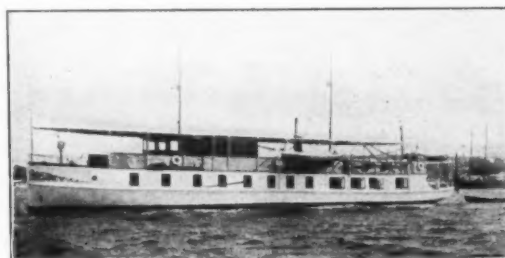
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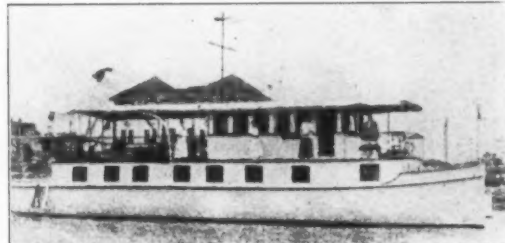
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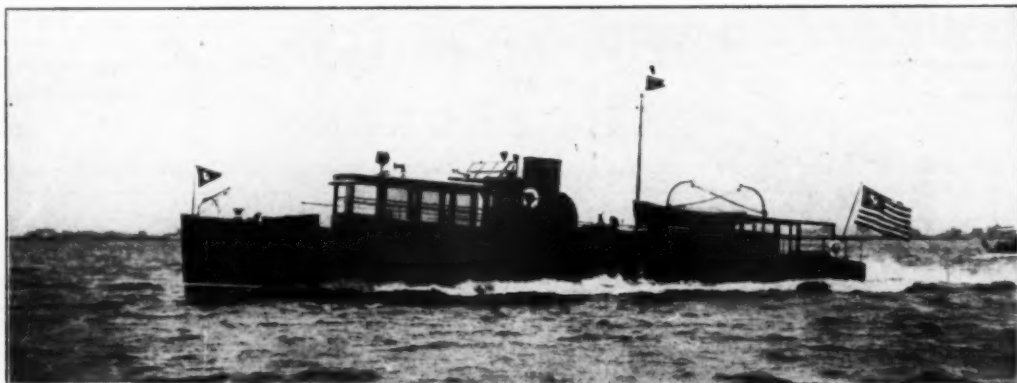
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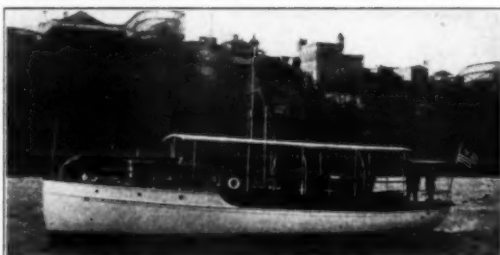
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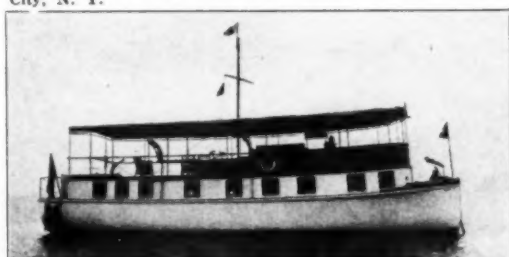
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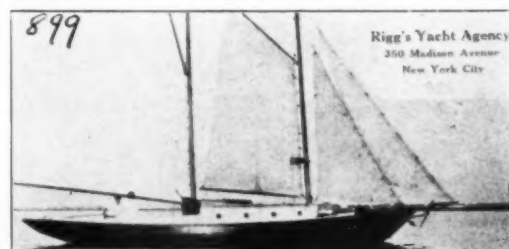
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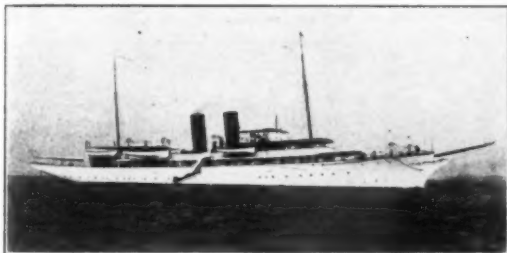
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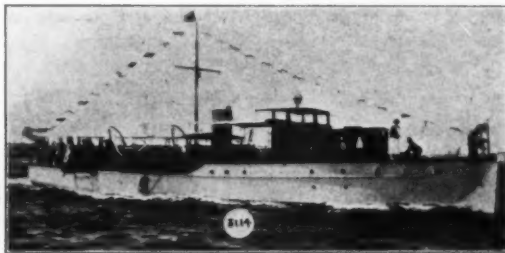
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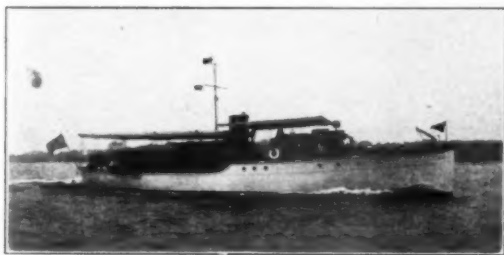
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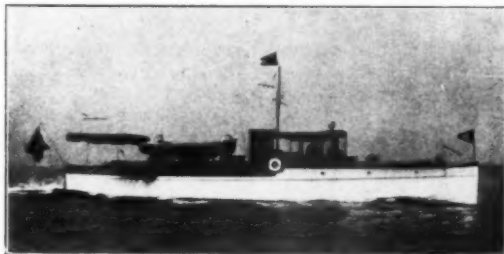
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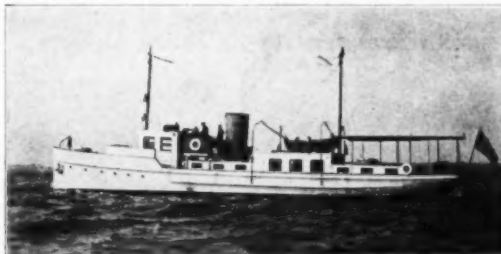
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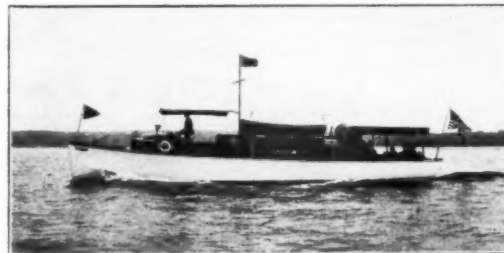
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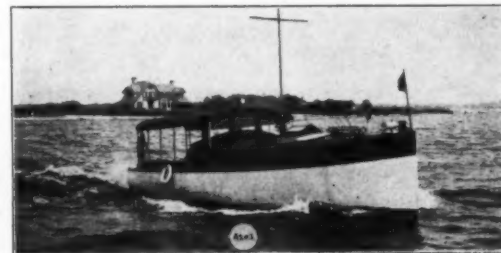
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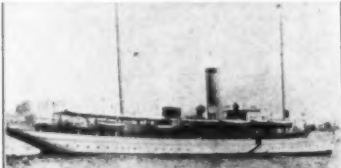
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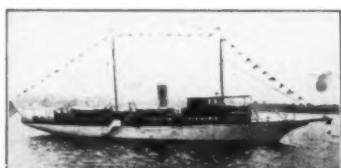
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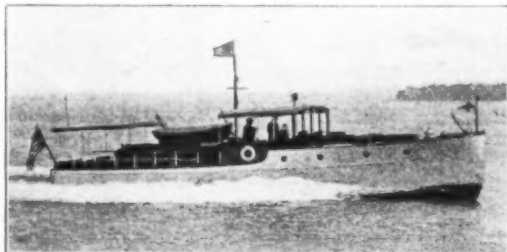
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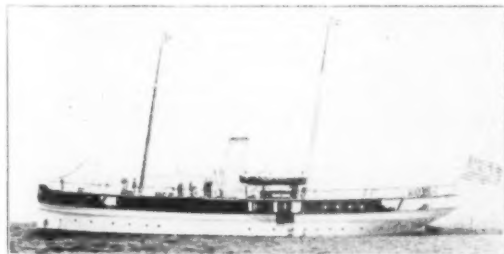
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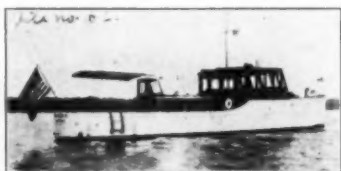
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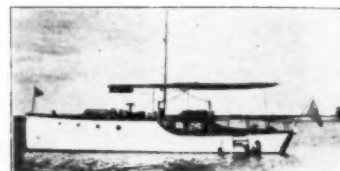
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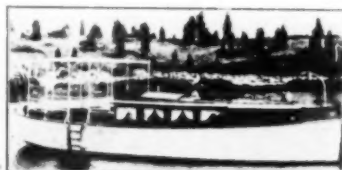
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Yacht and Motor Boat Brokerage

19 West 44th Street, New York City

Telephone, Murray Hill 8676

"What a For Sale Ad in November MoToR BoatinG Did to My Boat"

I had made up my mind to sell my 46 footer Aragon. I did not want to but circumstances made it seem wise to do so. I wrote to Chapman for advice and he said to take a half page in the November MoToR BOATING. I objected to that expensive advertisement at that season of the year, fearing that I would have to do it over again in the Spring. He said I was wrong so we went ahead.

In the same mail with the November MoToR BOATING there was the first inquiry. I heard from Milwaukee, Wis.; Grand Rapids, Mich.; Detroit, St. Louis, Troy, Boston, New York and several places immediately about New York, Philadelphia, Baltimore, Norfolk, Burnswick, Ga.; Pensacola, Fla.; Galveston, Texas, and Stockton, California. From several of these places I had several letters from different people.

One man from Philadelphia inspected the boat but he was really looking for an Elco and finally found one and bought her. Another man from New York inspected her but wanted more room about the engine. A third man inspected her and wanted her but he lacked the funds.

Before the month was up I received word from MoToR BOATING that they had an inquiry from Chevy Chase, Washington, D. C. I 'phoned the party and the boat was inspected on December Second and the deal settled on December fourth, practically a month after the ad appeared before the boat-loving public.

It is interesting that I heard from the entire circle of the United States and then finally sold the boat in my own city but only *through the ad in MoToR BOATING*. I feel that much credit is due MoToR BOATING upon the way the ad was gotten up, all of which I left entirely to them. Also I wish to express my gratitude for the hearty cooperation and help that was given me by the Editor, Chas. F. Chapman.

It certainly pays to advertise in MoToR BOATING.

(signed)

A. B. Bennett

Commander, United States Power Squadrons
Washington, D. C.
December 15th, 1923



BUY YOUR BOAT NOW!

At Fall Prices

- 80' x 14' x 3' 6" Bridge Deck, (2) 75 H.P. Standards. Four staterooms, large deck saloon. Very adaptable for Florida cruising.
- 67' 6" x 11' 10" x 4' 6" Bridge Deck, 85 H.P. Heavy Duty Sterling.
- 65' x 14' 4" Cruiser, houseboat accommodations, (2) 60 H.P. Standard engines. Two double staterooms and deck saloon. Built 1923.
- 62' x 12' x 3' 9" Bridge Deck, 70 H.P. Murray & Tregurtha. Two large staterooms aft, galley and dining saloon forward. Crew's quarters peak, engine room amidship.
- 60' x 12' x 3' 7" Bridge Deck, (2) 50 H.P. Sterlings.
- 60' x 10' 6" x 4' Bridge Deck, 60 H.P. Standard.
- 58' 6" x 12' x 4' Bridge Deck, 90 H.P. Murray & Tregurtha. Inclosed bridge. Boat in first-class condition.
- 51' x 11' x 3' 6" Bridge Deck, 4 cylinder Standard, 32 volt Delco lighting plant. All upholstering new, including springs for each berth. New inclosed bridge. Interior finished in solid mahogany and in first-class condition.
- 51' x 10' 3" x 4' 3" Bridge Deck, 75 H.P. Speedway. Speed 13 knots, large dining saloon and double stateroom. Excellent sea boat.
- 49' 10" x 10' 4" x 3' 6" Bridge Deck, 36 H.P. Standard. Semi-inclosed bridge, plenty of deck space, a very heavily constructed and able boat.
- 40' x 10' x 2' 6" Bridge Deck, 55 H.P. Sterling, two double staterooms and toilet.
- 40' x 10' x 3' 6" Bridge Deck, 40 H.P. J. V. B. Full headroom in cabin, large cockpit.
- 40' x 10' x 3' Raised Deck, 60 H.P. Buffalo. Self-starter and generator, plenty of cabin and deck space.
- 40' x 9' x 3' 6" Raised Deck, (2) 20 H.P. Kermaths. Self-starter and generator. Full headroom in cabin, boat in first-class condition.
- 40' x 12' x 3' Raised Deck, 30 H.P. Vulcan. Large cockpit, standing top and side curtains. Built in 1918.
- 38' x 9' 8" x 3' 6" Bridge Deck, 24 H.P. Automatic. Inclosed bridge.
- 38' x 10' 6" x 34" new Bridge Deck, 50 H.P. Van Blerck. Semi-inclosed bridge, large double stateroom and saloon.
- 32' x 9' x 2' 6" Raised Deck Cruiser, 20-35 H. P. Sterling.
- 32' Elco Cruisette. J. V. B. Engine. Boat in first-class condition. Fully equipped.

EXPRESS CRUISERS

- 50' x 10' 9" x 3' 3" Express Cruiser, 160 H.P., 8 cylinder Van Blerck. Built by Great Lakes Boat Building Co.
- 60' x 13' x 3' V-bottom, (2) 150 H.P. Sterlings. Speed 18-25 miles.
- 55' x 11' x 2' 9" Express Cruiser, (2) 300 H. P. Sterlings.

HOUSEBOATS

- 45' x 14' 6" x 3' 6" Houseboat, 75 H.P. Frisbie.
- 38' x 11' x 3' Houseboat, 30 H.P. Speedway.
- 48' x 16' x 3' 6" Houseboat, 25 H. P. Globe.
- 45' x 14' 6" x 3' Houseboat, 80 H.P. Buffalo.
- 52' Mathis Houseboat. Standard engine.
- 60' x 14' x 2' 6" Houseboat, 1922 (2), Standard engines, 3 staterooms and deck saloon.
- 65' x 13' x 3' 6" Houseboat, 70 H.P. H.D. Standard, 2 double and 1 single staterooms.
- 74' x 19' x 3' Houseboat, (2) 50 H.P. 20th Century engines, 2 double and 2 single staterooms, large deck saloon, handsomely furnished.

AUXILIARIES

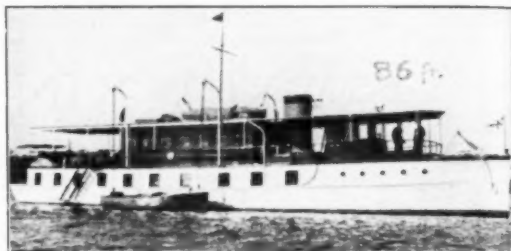
- 28' x 11' 4" x 3' 6" Auxiliary Yawl, Palmer engine.
- 41' x 11' x 3' 6" Auxiliary Yawl, Vulcan engine.
- 48' x 13' x 5' Auxiliary Yawl, 12 H.P. Palmer.
- 55' 6" x 18' 6" x 5' Schooner Yacht. Excellent condition. Will sell cheap.
- 60' x 16' x 4' Auxiliary Schooner, Frisbie engine.
- 63' 6" x 15' 6" x 4' Auxiliary Yawl, Scripps engine.
- 70' x 15' x 9' Auxiliary Schooner, Lathrop engine.
- And many other type yachts and commercial boats.

YACHTMEN'S SERVICE AGENCY

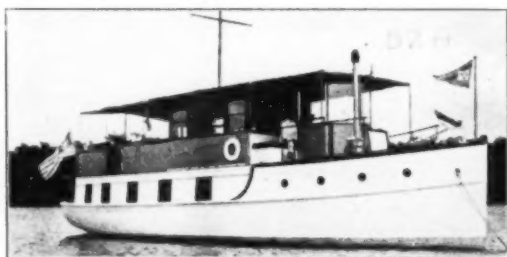
1233 Real Estate Trust Building, Philadelphia, Pa.

Phone: Walnut 4830

SOUTHERN YACHT AGENCY



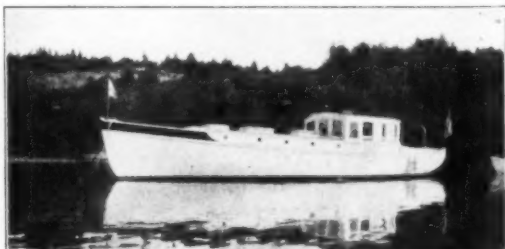
We have for sale some excellent Mathis Houseboats in practically every size in which they have been built and call especial attention to the following sizes 86 ft—80 ft—70 ft—61 ft—52 ft—which we can offer at very attractive prices.



Southern Yacht Agency, American Bldg., Baltimore, Md.



No. 646—For Sale—Bronze auxiliary schooner, 113 ft. x 85 ft. x 21 ft. x 5 ft. 10 in. Four owners' staterooms, two baths, large main saloon and breakfast room. Captain's stateroom, etc. Three tenders, including a 21 ft. Speedway launch. For data on this and other desirable sailing yachts consult Roger M. Haddock, Naval Architect and Yacht Broker, 50 East 42nd Street, New York.



No. 173—For Sale—able power boat, 49 ft. x 12 ft. x 3 ft. 6 in. Design worked up by John G. Alden from models of Eastport fishing launches. Built in 1922 of selected materials. Very plainly finished inside and out. Accommodations consist of two berths and galley forward, two berths in main cabin (full headroom), toilet room. Ample locker space. Large engine room, roomy pilot house and cockpit. Four-cycle Mianus engine, speed nine miles. Highly practical for use in connection with a summer home which necessitates a ferry for carrying passengers and supplies in all kinds of weather, winter and summer, and also for cruising. Apply John G. Alden, 148 State St., Boston.

Pick Your 1924 Motor from Our Guaranteed Rebuilt Engines

FOR two years we have been telling you what we intended to do, and what we have done. Now we are offering you the following engines, thoroughly and completely rebuilt from base to spark plugs, guaranteed absolutely, with no IFS, ANDS or BUTS attached to the sale.

These motors have been run in and tested under their own power, enameled, all brass fittings polished, and refinished throughout to look like new. Engines are complete with all fittings back to and including couplings.

*My word
is good
D.C. MacNeill*

The following are all 4 cycle engines:

- 10 H.P. LIPPERT, medium duty, 2 cyl., $4\frac{1}{2}$ " bore, $4\frac{1}{4}$ " stroke, A. K. ignition, complete to coupling.
- 7-8 H.P. PALMER ML 2 cyl., $4\frac{1}{2}$ " bore, $4\frac{1}{2}$ " stroke, A. K. ignition, complete to coupling.
- 10-12 H.P. PALMER MR-2 2 cyl., 5" bore, 6" stroke, A. K. ignition, complete to coupling.
- 10-12 H.P. PALMER NR-2 2 cyl., 5" bore, 6" stroke, A. K. ignition, complete to coupling.
- 10-12 H.P. PALMER NR-2 (latest type) 2 cyl., 5" bore, 6" stroke, A. K. and magneto, complete to coupling.
- 10-12 H.P. PALMER R-3 3 cyl., 5" bore, 6" stroke, A. K. ignition, complete to coupling.
- 17-25 H.P. STERLING, medium duty, 4 cyl., $3\frac{3}{4}$ " bore, $5\frac{1}{4}$ " stroke, Bosch magneto, complete to coupling.
- 22 H.P. CLAY, 2 cyl., $7\frac{1}{4}$ " bore, 7" stroke, Bosch magneto, complete to coupling.
- 17-25 H.P. STERLING, medium duty, 4 cyl., $3\frac{3}{4}$ " bore $5\frac{1}{4}$ " stroke, Bosch magneto, complete to coupling.
- 20-35 H.P. STERLING, Model B, medium duty, 4 cyl., $4\frac{3}{8}$ " bore, $5\frac{1}{2}$ " stroke, Bosch magneto, complete to coupling.
- 55-60 H.P. STERLING, Model R1, high speed, 4 cyl., $4\frac{3}{8}$ " bore, $5\frac{1}{2}$ " stroke, double ignition, 2 spark magneto, complete to coupling.
- 20-35 H.P. STERLING, Model B, medium duty, 4 cyl., $4\frac{3}{8}$ " bore, $5\frac{1}{2}$ " stroke, Bosch magneto, complete to coupling.
- 30-50 H.P. STERLING, Model B, heavy duty, 4 cyl., $5\frac{1}{2}$ " bore, 6" stroke, A. K. ignition, complete to coupling.
- 45-60 H.P. DOMAN, medium heavy duty, 4 cyl., 6" bore, 7" stroke, double ignition, A. K. and magneto with Impulse starter, complete to coupling.
- 30-40 H.P. STERLING, Model B, medium duty, 4 cyl., $5\frac{1}{2}$ " bore, 6" stroke, double ignition, A. K. and Bosch magneto, complete to coupling.
- 50 H.P. STERLING, Model R, high speed, 4 cyl., $4\frac{3}{8}$ " bore, $5\frac{1}{2}$ " stroke, double ignition, 2 spark Bosch magneto, complete to coupling.
- 65-75 H.P. STANDARD, heavy duty, 4 cyl., 8" bore, 10" stroke, M & B magneto, complete to coupling.
- 25-40 H.P. STERLING, Model B, 4 cyl., $4\frac{3}{4}$ " bore, 6" stroke, Dual magneto, complete to coupling.
- 36 H.P. REGAL J. C., heavy duty, 4 cyl., $6\frac{1}{2}$ " bore, 7" stroke, Bosch magneto, complete to coupling.
- 45 H.P. STERLING, 4 cyl., $6\frac{1}{2}$ " bore, 9" stroke, Bosch magneto, complete to coupling.
- 55 H.P. DOMAN, heavy duty, 4 cyl., 7" bore, 9" stroke, A. K. and magneto with Impulse starter, complete to coupling.
- (2) 85-125 H.P. STERLING, right and left hand, Model FM, 6 cyl., $5\frac{1}{2}$ " bore, $6\frac{1}{2}$ " stroke, double ignition, 2 spark Bosch magneto, complete to coupling.
- 65-100 H.P. SCRIPPS, 6 cyl., $4\frac{1}{2}$ " bore, 6" stroke, double ignition, A. K. and magneto Impulse starter, complete to coupling.
- 50-70 H.P. AUTOMATIC, heavy duty, 4 cyl., $7\frac{1}{2}$ " bore, 9" stroke, Bosch magneto, complete to coupling.
- 60 H.P. STERLING, Model D, heavy duty, 6 cyl., $6\frac{1}{2}$ " bore, 8" stroke, double ignition, A. K. and Bosch magneto, complete to coupling.
- 90-100 H.P. FRISCO-STANDARD, overhead valves, heavy duty, 4 cyl., $8\frac{1}{2}$ " bore, 10" stroke, Bosch magneto, complete to coupling.

The following are all 2 cycle engines:

- 24 H.P. LATHROP, 2 cyl., $7\frac{1}{2}$ " bore, $7\frac{1}{2}$ " stroke, M. & B. Spark. (ALove Lathrop was built in Reverse.)
- 15 H.P. MIANUS, 2 cyl., $5\frac{1}{2}$ " bore, 6" stroke, M. & B. Spark.
- 12 H.P. BRIDGEPORT, 2 cyl., $5\frac{1}{4}$ " bore, $5\frac{1}{4}$ " stroke, M. & B. Spark.
- 11 H.P. HUBBARD, 2 cyl., 5" bore, $5\frac{1}{2}$ " stroke, M. & B. Spark.
- 10 H.P. PALMER, 2 cyl., $4\frac{1}{2}$ " bore, $4\frac{1}{2}$ " stroke, Jump Spark.
- 8 H.P. MIANUS, 2 cyl., $4\frac{3}{8}$ " bore, 5" stroke, M. & B. Spark.
- 8 H.P. CUSHMAN, 2 cyl., 4" bore, 4" stroke, Jump Spark.
- 6 H.P. MIANUS, 2 cyl., 4" bore, 4" stroke, M. & B. Spark.
- 5 H.P. PALMER, 2 cyl., $3\frac{3}{4}$ " bore, $3\frac{1}{2}$ " stroke, M. & B. Spark.
- 5 H.P. PALMER, 2 cyl., $3\frac{3}{4}$ " bore, $3\frac{1}{2}$ " stroke, Jump Spark.
- 6 H.P. BRIDGEPORT, 1 cyl., $5\frac{1}{4}$ " bore, $5\frac{1}{4}$ " stroke, M. & B. Spark.
- 6 H.P. LOZIER, 1 cyl., 5" bore, 5" stroke, M. & B. Spark.
- 4 H.P. PALMER, 1 cyl., $4\frac{1}{2}$ " bore, $4\frac{1}{2}$ " stroke, M. & B. Spark.
- 4 H.P. PALMER, 1 cyl., $4\frac{1}{2}$ " bore, $4\frac{1}{2}$ " stroke, Jump Spark.
- 4 H.P. BRIDGEPORT, 1 cyl., $4\frac{1}{2}$ " bore, $4\frac{1}{2}$ " stroke, M. & B. Spark.
- 4 H.P. CUSHMAN, 1 cyl., 4" bore, 4" stroke, Jump Spark.
- 3 H.P. VAMP, 1 cyl., $3\frac{1}{2}$ " bore, $3\frac{1}{2}$ " stroke, Jump Spark.
- 2 H.P. PALMER, 1 cyl., $3\frac{1}{4}$ " bore, $3\frac{1}{4}$ " stroke, Jump Spark.
- 2 H.P. CUSHMAN, 1 cyl., 3" bore, 3" stroke, Jump Spark.
- 2 H.P. EAGLE, 1 cyl., 3" bore, 3" stroke, M. & B. Spark.

**REFUND
BOND GUARANTEE**

*That this motor
has been rebuilt
from spark-plug
to base*

**MARINE ENGINE CO
OF PHILADELPHIA**

MARINE ENGINE Co.

MACHINERY EXHIBIT
PHILADELPHIA, PA.
BOURSE BUILDING

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REBUILT ENGINES

For years our guarantee on an engine has been accepted as absolute protection to the purchaser of a rebuilt motor. Today the purchase of a rebuilt engine from us is assurance of a good machine, exactly as represented and the unqualified guarantee of the largest marine engine dealer in the world. The saving is almost 60% and our stock embraces machines of practically every size and type.

Send for our Bargain List.

BRUNS, KIMBALL & CO.

Branch Store: Philadelphia, Pa.

153-155-157-159 West 15th Street
NEW YORK CITY



No. 566—For Sale—High speed runabout 32' x 6' 6" x 2' draft. 12 cylinder Packard Liberty motor—speed up to 40 M.P.H. Outfit new 1923. Reasonable price. Construction of the very best. For further particulars apply to R. M. HADDOCK, Naval Architect and Broker, 50 East 42d St., New York City.



FOR SALE—40' x 10' x 3' 8", Burger built commercial boat. Hull 1 1/2" oak, with 2 1/2" frames on 11" centers, especially adapted either for passengers, supplies or towing—3 cylinder, 4 cycle 40 h.p. 7 x 9 heavy duty motor, toilet, electric lights and complete equipment—all in excellent condition. Cash price for quick sale, \$2,500. W. J. Scott, 4921 Huron St., Chicago, Ill.

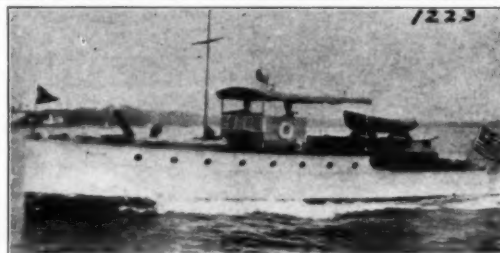


For Sale.—Two sub-Chasers in A-1 condition; one twin screw, the other triple screw. Demonstration any time.—Peterson, Hudson Park, New Rochelle, N. Y.

1 6 cyl., 45-65, type B, Sterling.....	\$700
1 3 cyl., 27 H.P., 4 cy. Wolverine.....	500
1 4 cyl., 4 cy., 18 H.P. McCullins.....	100
1 3 cyl., 4 cy., 15 H.P. Pees.....	100
1 3 cyl., 2 cy., 18 H.P. Hock.....	100
1 2 cyl., 2 cy., 12 H.P. Smally with clutch.....	100
1 2 cyl., 2 cy., 9 H.P. Gray.....	75
1 1 cyl., 2 cy., 6 H.P. Gray.....	50
1 6 cyl., 4 cy., 40-50 H.P. Hershall Spillman, new.....	100
1 1 cyl., 2 cy., 4 H.P. Perkins.....	30
1 1 cyl., 2 cy., 4 H.P. Truscot.....	30
1 1 cyl., 2 cy., 2 1/2 H.P. Caille.....	40

JESIEK BROS., Macatawa, Mich.

CABIN CRUISER FOR SALE—28x8 ft., 2 cyl. Frisbie engine, (4 years old) completely equipped for cruising. Cedar tender. Hamilton, 50 Church St., Cort. 2865.



No. 1223—For Sale—A very desirable 46' express cruiser. Speed 18 miles. Two staterooms, galley, etc. Has wind shield and hull is double planked mahogany. Speedway motor. For further particulars of this or other yachts communicate with Harry W. Sanford, Yacht Broker, 501 Fifth Ave., at 42d St., New York.



Will sell at a reasonable price my 30 foot by 8 foot cruiser fitted with every convenience and sleeping quarters for four. Has electric lights, running water, toilet, lee box and full equipment. Power plant, 4 cylinder, 16 h. p. Buffalo.

Box 100 MOTOR BOATING, 119 West 40th St., New York, N. Y.



FOR SALE—62' Great Lakes cruiser as good as new. Twin screw. Speed 23 miles. Owner anxious to sell, as he has bought larger yacht through us. Make offer. SOUTHERN YACHT AGENCY, American Building, Baltimore, Md.

WANTED: Cruising 40 ft. motor seagoing heavy construction launch, cabin for six, 45 h.p. heavy duty engine. Give complete specifications. Steel hull preferred. Box 81, MoToR Boating.

For Sale—Oil Burning Engines. Two 25 H.P., heavy duty, 600 R.P.M., 4 1/4 x 6 1/2 marine engines complete with propeller equipment. These engines are practically new. Address Box 101, Motor Boating.

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Thomas D. Bowes, M. E.
NAVAL ARCHITECT AND ENGINEER

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Every design, now as always, my personal
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Formerly General Manager, The Elco Works,
Bayonne, N. J.

Yacht and Motor Boat
Brokerage

19 West 44th Street New York
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NAVAL ARCHITECT

602 Liverpool & London & Globe Bldg.
New Orleans, Louisiana

Sail and power yachts. Houseboats and
commercial vessels. Surveys made in all Gulf
Ports.

I have a large number of yachts of every
description for sale, and some for charter.
Cable address: "Walkeen"

Yard and Shop

(Continued from page 4c)

The series will consist of 10 charts printed on bond paper, 24 by 38 inches, each containing strips from 6 to 8 inches wide. These charts may be cut into strips and carried in folders which will readily adapt themselves to the limited spaces so often found on small boats. When so used they will resemble the familiar automobile strip maps.

This series is to be used in conjunction with the Inside Route Pilot, New York to Key West, published by that Bureau. The route described therein will be shown by heavy red lines, and the soundings plotted in feet. Certain outside areas along the coast where the route passes through open waters will also be included in this series.

These charts will be sold at the price of 25 cents each, or \$2.50 for the series, orders being filled for individual charts or the entire series.

Further information relative to these charts may be obtained by writing the Director, U. S. Coast and Geodetic Survey, Washington, D. C.

Gray Engines in New York

Word has been received that the Gray Marine Motor Company of Detroit has arranged with Bowler, Holmes & Hecker of New York to handle the sales of the entire line of Gray marine engines in and about New York. It will be remembered that Bowler, Holmes & Hecker are the sales representatives for many of the most prominent marine engines on the market today. Among these can be included the Bridgeport motor, the Universal motor, the Stearns motor, and the New Jersey motor, which will now be supplemented by the addition of the Gray series. Paragon reverse gears made in Taunton, Mass., and the Harthan propeller are also sold from their office. It is the aim of this company to carry in stock a sufficient quantity of repair parts for all motors which they distribute, and in addition they maintain their own machine shops with ample machine tools for doing all kinds of repair and maintenance work on their engines. A large stock of propellers is carried and it is possible to ship directly from stock in the case of rush orders.

Portable Electric Tools

In line with the policy of passing along to the consumer the savings due to a larger volume of selling and production, the Black & Decker Manufacturing Company, Towson, Md., have set a new list of prices for portable electric tools. The prices on the heavy duty portable electric drills have been reduced by approximately twelve per cent, as well as the prices on the four, five, and six inch portable electric grinders. This is the second reduction in prices made during the past year, as a substantial reduction was made last June. The prices of these tools are now so moderate that there is no excuse for every shop to supply itself. The saving in time and energy will more than repay the slight cost of the tools.

Frederick K. Lord

Naval Architect

120 Broadway, New York

CHARLES D. MOWER

Designer of

SENSIBLE CRUISERS
POWER—SAIL—AUXILIARY

Twenty-five years' practical experience
150 Madison Avenue New York City

FREDERIC S. NOCK

NAVAL ARCHITECT

Yacht Builder, Marine Railways,
Storage and Repairs

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NEW YORK CITY

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JOHN H. WELLS

NAVAL ARCHITECT

23 Years' Experience

Brokerage Supervision Stock Boats

Telephone: Murray Hill 8810

347 MADISON AVE., NEW YORK

For the Radio-Boatman

A new book has just been published which is called, Henley's 222 Radio Circuit Designs, which is an entirely new and practiced book on the design of radio receiving and transmitting circuits. It will meet the needs of the novice or expert and is full of correct and trustworthy radio information from which any one can build and operate successfully any of the circuits described. It includes all standard types and latest improvements such as those of Armstrong, DeForest, Reinartz, Cockaday, Hazeltine, Colpitts, Grimes, and Flewelling. The book has been simply written, that the novice may be able to understand, yet on the other hand is so thorough that he can build successfully any of the circuits described without other assistance. It is completely indexed, so that the reader can find at once just the information he is seeking. Copies can be secured from the Norman W. Henley Publishing Company, 2 West 45 Street, New York, N. Y., at a very moderate cost of only \$1.00.

LIKE NEW

The engines we take in trade are rebuilt in our own shops, every worn part replaced, and refinished to look like new and run like new. Masters Rebuilt Engines are practically equal to new engines just out of the factory. As we are Chicago distributors for the best marine engines made, we get the pick of used engines in trade for rebuilding.

Write for our latest bargain list

W. L. MASTERS & COMPANY

231 North State Street, Chicago, Ill.

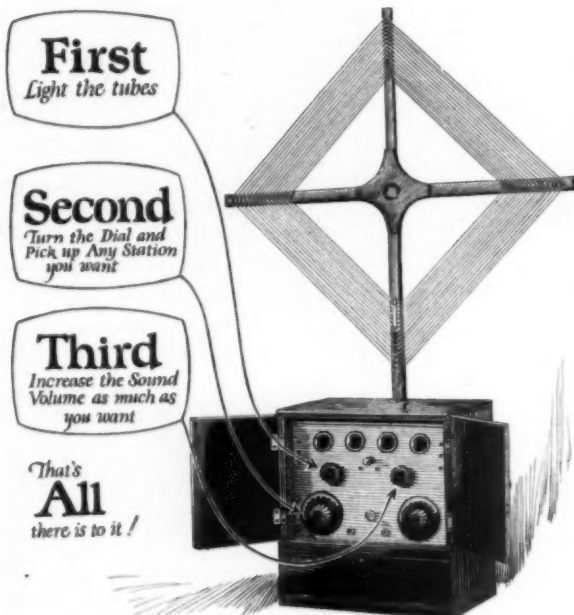
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See How Easy It Is

To Get the Radio Broadcast from All Over the Continent

If You Have a DeFOREST RADIOPHONE!



No Outdoor Antenna—The Loop as shown is all you need, though the De Forest Reflex can be used with outdoor aerial if desired.

No Outside Batteries—All Dry Cells go inside the box, although the set can be used with the storage batteries if desired.

No Ground—No outside wires or connections of any sort. The set gets cross-continent broadcast just as you see it, with great clearness.

The world famous De Forest Reflex Radiophone, Type D-10, is a 4-tube set with a range on indoor loop of 3,000 miles (record range 5,000 miles). It has a reputation for the clearest reception of broadcast in existence. Uses either head phones or loud speaker. The simplest long-distance, set made low in first cost; economical to operate. Price for set and loop, \$150.00, plus 6% for territories west of the Rockies.

FREE Radio Catalogs Send us your name and address and we will send you the new De Forest Catalog with full details and prices on sets, audions, and parts.

De Forest Radio Tel. & Tel. Co.

Dept. N. B. 6

Jersey City, N. J.

De Forest Radiophones

"Made by the Man Who Invented Broadcasting"

From Northern Ice to Florida's Sunshine

(Continued from page 16)

to realize that only a real pilot with all the navigating aids obtainable could find his way through that labyrinth of water.

A few moments later the yacht slowed down to nose her 5 foot draft through a 4½ foot depth into the Skidway narrows. As I came abreast my friend hailed cheerily with a "How are you making out?" "Fine," I lied bravely, "except that she's leaking a bit and I can't get a chance to pump out." "I'll send a man aboard to help out, he replied. "Come alongside." That's how Bill entered this story.

The channel soon opened out into a large sound and Cricket was hard pressed to keep the trail of the fleeing yacht. Right out into the ocean we went, then swung around a buoy and re-entered another winding channel—at least the yacht did. The poor Cricket laid down and died right there. The yacht disappeared around a bend and not for a full week did I see her again. Bill was mine for keeps.

We dropped the hook and set out to make repairs. It didn't take long to locate the trouble. The pump shaft was sheared off at the front end—(magneto on same shaft). Out came the instruction book. Ah, here's the answer. "The pump shaft is fastened with two drilled out screws that will break if the pump becomes clogged. Always carry extra screws" etc., etc. We started to hunt for these screws and hunted for an hour, taking everything off that looked as if it might conceal a small screw. Then I decided that the instruction book writer and the engine builder had not been co-operating. They may have used drilled screws at some remote time but this particular motor had the pump shaft connected by a taper pin, both ends dressed off flush and polished. That's why it took me an hour to locate it. I drilled out the broken pin, inserted a brass wood screw in its place and attempted to start. No luck—

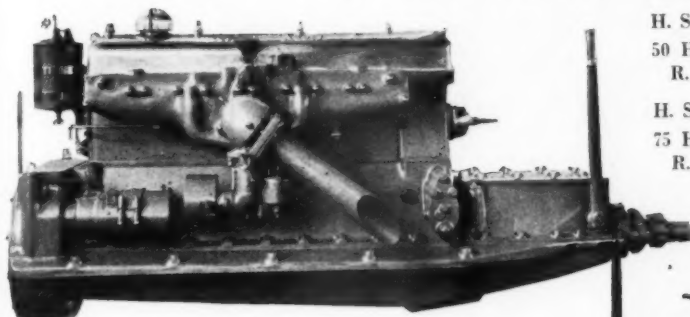
Business of thinking hard. Why, of course, the magneto was out of time. The instruction book was very concise on the subject of timing and I had visions of soon being under way again. First a cover was to be removed from the transmission which would reveal the fly wheel. Turn over slowly until mark M3 came opposite pointer, then set spark for number one cylinder or something to that effect. Off came the cover but how to look through the hole was a feature the book neglected to state. We finally learned that it could be done to some extent if one stood on his head. I kidded Bill into searching out that M3 mark while I slowly "turned her over." He caught the mark finally but not a minute later I accidentally touched the starter button and M3 had to be hunted down again. How many times we went through that performance in the next few days I dislike to say. I tried to time that engine according to the book, then according to my own ideas, then tried to hit it by luck. Each time M3 had to be hunted anew. Bill was game but I noticed that he finally lost most of his enthusiasm. He had lost hope in my ability and came to regard the M3 gadget as merely some trick to keep him busy. On the third day I quit in disgust. We restored the removable partition around the motor, cleaned up and decided never again to touch that motor—happen what might—and we didn't.

We were anchored on a lonely stretch in St. Catherine's Sound, the open Atlantic ahead and miles upon miles of flat salt marshes in every other direction. We could see solid land miles away but as the foreground was all mud flats, we couldn't figure out how to get there. Not a craft had passed since we had been anchored there so we settled down to a waiting game as the only thing to do. The third night it started to blow—straight in from the Atlantic—aimed to hit us with its full force. We couldn't have picked out a spot where that storm could have hit us straight between the eyes with more deadly accuracy. There was an extra heavy anchor with a coil of heavy cable aboard, both stowed aft with everything else on top of them. I never expected to use that anchor, in fact didn't quite understand what it was aboard for. It didn't take me long to understand that night. We dug out the anchor and cable in the dark and lugged them forward over the cabin roof. Then the trouble started. It was one of those trick anchors—the kind that fold. Neither Bill nor I could make head or tail out of it. Cricket was pitching violently and drenching us with spray. It was dark, cold, scary and everything. Please reader, use your imagination and remember who we were, for if it must be known Bill was a hopeless dub, too. Sailor by trade, but after all, only a deck swabber and mop handler. He was a poor aid in a tight place. We rigged a light and then solved that anchor riddle step by step. The cable was bent on with two fancy knots of the kind a drug clerk uses in tying up packages. We were resourceful if not nautical. Besides nobody would see that knot down on the ocean's floor. Then we heaved Cricket ahead until the light anchor seemed close at hand and tossed the heavy one off into the dark. Both cables were then paid out and made fast with some semblance to an evenly

(Continued on page 60)

HALL-SCOTT

4- H. S. M. Series -6

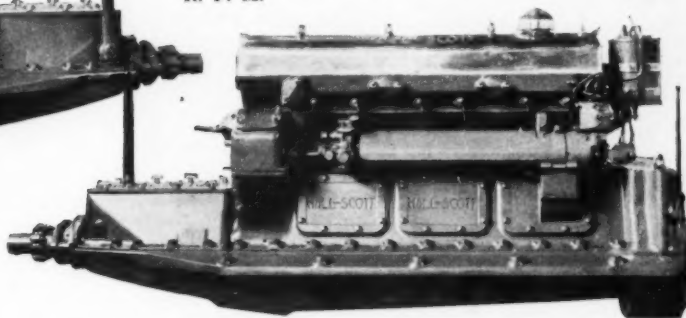


H. S. M. 4. Weight 1275 lbs.

50 H. P. at 1200 R. P. M. 70 H. P. at 1800 R. P. M.

H. S. M. 6. Weight 1525 lbs.

75 H. P. at 1200 R. P. M. 100 H. P. at 1800 R. P. M.



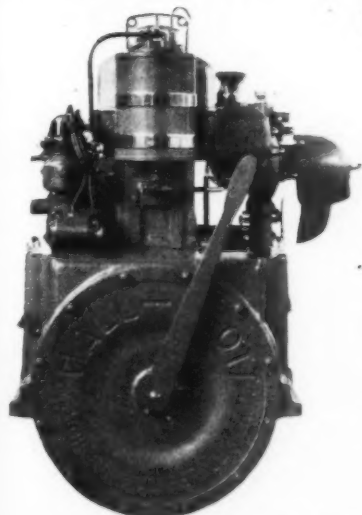
Bore, 4 1/4 in. Stroke 5 1/2 in.

Overhead valves and camshaft with silent chain drive.

Full pressure lubrication. Extra large valves.

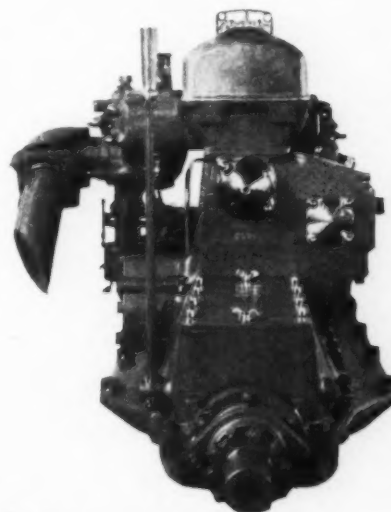
Governor is an integral part of the camshaft.

THE OUTSTANDING NEW ENGINES OF THE 1924 BOAT SHOW



AT the New York Motor Boat Show the Hall-Scott H. S. M. 4 and 6 were unquestionably the most prominent new models exhibited by any manufacturer of high grade marine engines. They are not merely a refinement of our earlier marine offerings but embody a new type, adding two important sizes to the HALL-SCOTT marine line.

These H. S. M. engines are designed for high duty service in large runabouts, cruisers and auxiliaries. They are somewhat smaller and heavier engines than the L. M. series and are intended for use at speeds up to 1800 R. P. M.



Many new features are found in these engines, together with a degree of accessibility never before provided in any marine type. The cylinder head with all the valve mechanism can be removed without even disturbing the manifolds. Connecting rod bearings can be taken up through large hand holes, and if required, the entire cylinder block can be removed as a unit. For complete overhauling, the engine may be lifted out of the boat, leaving the lower crankcase attached to the engine bed which eliminates the necessity of realignment.

Write today for complete specifications and prices.

H. S. M. Series, 50-70 and 75-100 H. P.

L. M. Series, 125 and 200 H. P.

HALL-SCOTT MOTOR CAR COMPANY, Inc.

Eastern Branch

887 Niagara Street
Factory: Berkeley, California

Buffalo, N. Y.

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Havana Motor Boat Regatta

The Comision Nacional para el Fomento del Turismo en Cuba, of

HAVANA, Cuba, and the Habana Yacht Club, extend a cordial invitation to all motor boatmen and sportsmen to attend the Annual Motor Boat Regatta to be held at **Havana, March 15 and 16, 1924**

Races have been arranged for Express Cruisers and Runabouts. Entries have already been received for the runabout classes as follows:

SWEEPSTAKES—LIBERTY CLASS

Open to Displacement boats of over 25 feet in length powered with motors of not over 1350 cubic inches and Displacement boats of over 32 feet in length powered with motors of not over 1650 cubic inches piston displacement.

(Qualifying speed: 40 miles per hour.)

Boat	Owner	
Adieu II.....	Webb Jay.....	Chicago, Ill.
Munketear	Horace Dodge.....	Detroit, Mich.
Baby Cub	Howard Lyons.....	New York, N. Y.
Sue J	Webb Jay.....	Miami, Florida
Peerless Irene	V. A. Searles.....	Atlantic City
Nine Ninety Nine	Edsel Ford.....	Detroit, Mich.
Mary	Col. E. H. R. Green.....	Terrell, Texas
Wilgold	J. A. Williams.....	Buffalo, N. Y.

GENTLEMEN'S RUNABOUT CLASS

Open to Displacement boats of over 25 feet in length powered with motors of not over 825 cubic inches.

(Qualifying speed: 35 miles per hour.)

Boat	Owner	
Miss Mary	E. L. Grimm.....	Buffalo, N. Y.
Bear Cat I	E. M. Gregory.....	Detroit, Mich.
Bear Cat II	Wilbur H. Young.....	New York, N. Y.
Bear Cat III	E. M. Gregory.....	Detroit, Mich.
Bear Cat IV	Wilbur H. Young.....	New York, N. Y.
Wilgold	J. A. Williams.....	Buffalo, N. Y.
Jerry	J. R. McCarthy.....	Detroit, Mich.

Full details may be obtained from

Comision Nacional para el Fomento del Turismo en Cuba, Havana, Cuba
SENOR RAFAEL POSSO, care of Habana Yacht Club, Havana, Cuba

or from

The Editor of MoToR BoatinG

From Northern Ice to Florida's Sunshine

(Continued from page 58)

divided tension. We were both badly scared by that time. Working up on the bow of the wildly pitching boat, with mostly nothing to hold on to, had put a decided crimp in our confidence. Then too, our old friend, the leak, was still with us. I have neglected to say that for three days we had been pumping more or less continuously,—the theory about "a new boat leaking for a day or so" long since abandoned for a sounder reason.

We pumped out and turned in to shiver ourselves to sleep, for our blankets, alas, had been purchased for southern climes. Light cotton blankets intended for a possible chilly night. They were a joke in that freezing weather.

A crash—bang and I rolled out to meet Bill coming from the opposite bunk. Cricket was on beam ends with everything loose kicking around the floor. I rushed for the deck to see what started the rumpus. What I saw gave me the jim jams. It was just breaking dawn. A heavy sea was rolling in before a half gale and there was Cricket lying in the trough, taking them broadside. I could see the anchor cables stretched and taut so knew we were still fast to the bottom. How she did roll—the bilge water sloshing up one side, then the other. Everything inside the cabin hostile and on the warpath. We could only hang on and wonder what next. The big roll, however, that woke us up was evidently the worst in the bag. Just why Cricket lay broadside to a gale was puzzling indeed, at least until I got my wits back and started to think it out. Then it became clear. We were in a tidal raceway. The wind pushed one way, the tide the opposite. Cricket became neutral and lay in the trough. In a few hours the wind won and the boat straightened around head on. After that except for the pitching and the cold we had a few quiet hours. We decided, however, to run up a distress signal. I read the instruction book all through in a vain effort to learn what constituted a distress signal. Bill said rockets or a burning tar barrel were the proper wrinkle. We settled on a towel at the masthead. Neither of us could shin up the mast so we brought the mast to us by slacking off the stays and unshipping it. It was a ticklish job working on that bucking cabin roof, both of us wearing life preservers. In fact we wore preservers continuously during that wild day.

I had scant faith in the distress signal but it made us feel better nevertheless. My mind was on the next turn of the

tide due that evening. The sea was rolling in higher than ever before and I couldn't see how we were to weather another session in the trough. We did though—in fact had an all night session of everything disheartening. Perhaps it was because we kept her free of water that she rode the swells better than in the morning. We pumped and pumped. Whatever the reason, the morning jolt was the worst we had.

The fifth morning broke cold and cheerless with the wind unabated. We took the morning dose of rolling and then settled down for a few hours sleep. Bill suggested that one of us keep awake. I agreed with him and volunteered to keep watch. Bill was asleep in a moment and so was I in two moments. I heard Bill dash for the companionway sometime later and thought he had gone daffy. Nevertheless I followed him topside and there, not fifty yards away, was a large oyster boat. She had already passed us and apparently had no intention of stopping. In desperation I beckoned them to come back and gloated inwardly as I saw the skipper push the tiller over.

She came alongside and after some parleying, agreed to tow us into sheltered water. "Didn't you see our signal?" I queried, pointing to the masthead. "We saw it all right" was the answer, "but didn't know what it meant. Tom he says it was a sign you alls wuz having dinner."

I have Bill to thank for that piece of work. He said he heard the muffler put, put, in his sleep. He woke up but thought he had been dreaming and was starting in for another try at sleep when he suddenly realized that he really did hear a motor exhaust. Another minute and we would have missed out.

They towed us fourteen miles inside to an oyster cannery where I made arrangements for another tow to Brunswick, Ga.—about sixty miles further. We towed all night and until afternoon of the following day before we tied up at the Brunswick Marine plant.

Bill had been fretting all day over the whereabouts of the yacht on which he belonged. All he knew was that she was bound for Jacksonville. We finally decided that the best thing for him to do was to take a train that night and go down to Jacksonville and see what he could learn. I parted reluctantly with Bill, for after all he was a good scout of his kind and Heaven only knows what I should have done without him. In

(Continued on page 62)

Don't Miss the Season at MIAMI BEACH

THE brilliant winter season at Miami Beach is now at its height. But it is winter in name only. In climate, in vegetation, in facilities for all out-door life it surpasses the best months of the Northern summer.

Here you can take your choice of boating, bathing, fishing, golf, polo, tennis or motoring without regard to weather or season. The annual Southern Regatta will be held at Miami Beach, March seventh and eighth.

You will enjoy a week, a month or the entire year at Miami Beach. The best way is to build a residence here which you can occupy each season or live here the year around if you wish.

The residence property has been fully improved and properly restricted. From many standpoints it is the most desirable colony ever developed, combining the physical advantages of perfect climate and surroundings with the popularity and social life which make it most attractive.

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MARCH 7 & 8

HOTELS DE LUXE
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FLORIDA

NAUTILUS GEORGE KROM, Mgr.
FLAMINGO C.S. KROM, Mgr.
LINCOLN B. LUNDBERG, Mgr.

From Northern Ice to Florida's Sunshine

(Continued from page 60)

dismissing Bill I must pay my respect to his ability to use the word gadget. Everything was a gadget to him. He could even use it twice in one sentence and still have its meaning clear.

Now that the excitement was over and left alone; I became utterly discouraged and tired of it all. I never wanted to see a boat again. I was so dirty and unkempt that I had to hide in the cabin, otherwise I probably would have chucked it all and taken the first train for Chicago. While in that mood a man hailed me from the dock and then came aboard. He said he was Manager of the plant and wanted to know what he could do for me. To him I unburdened myself, pouring out my trouble freely.

Then he spoke, and reader I leave it to you if his words were not born of undiluted wisdom. "Now see here," he said, "You're taking this too seriously. In the morning we will haul Cricket out and can probably fix the leak in ten minutes. We can make a new pump shaft in a few hours and if that's all your trouble, we can have you ready to run tomorrow noon. This is a dandy boat you have and your troubles don't amount to anything. Now let's go up to my house and after you have had a hot tub and a big sleep you will see things differently." Such hospitality to an entire stranger, such human reasoning, I went and took the cure prescribed—with two shots of good Scotch beside, and in the morning it was different. Again I was an enthusiastic yachtsman, ready for anything. To Walter Nathan of Brunswick, Ga., I owe my rejuvenation.

We went to the plant and found Cricket already on the ways. The leak? Why, a drain plug had been left out. I had suspected as much for some days but had never been able to prove it. Now criticize you finished boatman. You who know boats from A to Z. Have your fling, let me have your worst. Didn't I confess in the beginning that I was out of my groove. Yes, dub, you say, you're right but go on. What about the engine? Why couldn't you time it?

It takes courage to write this confession. I won't lay down completely on the plug but on the engine trouble I have no defense. Now listen—I worked three full days trying to time that cursed engine, working from the *exhaust valve* as a guide. Every engine I have ever tinkered with has had the number

one inlet valve at the front end of the block (overhead valves). On the Cricket engine the exhaust valve comes first. My head simply didn't function. Perhaps I was rattled, perhaps I was in too great a hurry and perhaps anything you can think of. One reason is as good as another.

Many a time since have I kicked myself figuratively. To think that we might have made repairs and been under way in two hours, if—

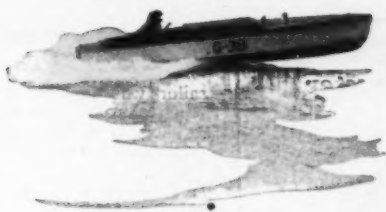
The cruise is now about to start and the yarn end. The Cricket went overside that same day in perfect condition, my friends came up from Jacksonville, we took on new supplies, including real charts—and again set out for Florida waters. Cricket was a model for good behavior from that moment. We cruised clear down to the tip of Florida, with a side trip up the St. Johns to Silver Springs on the way north in April. Then on to Charlestown where the cruise ended.

There is more to the yarn, of course. Who could cruise several thousand miles without uncovering some disturbing event? But on the whole the remainder of the cruise was simply a delightful experience, void of anything really worth yarnning about.

Some Statistics on Boats

The recent report of the Department of Commerce which includes only boats registered and numbered by this department, has been analyzed by H. V. Seavey of the G. B. Carpenter Company, Chicago, and from his calculations he finds that there are 29,287 registered motor boats owned in the states of Illinois, Ohio, Iowa, Michigan, Minnesota, Indiana, Kentucky, Wisconsin, Nebraska, and Missouri. This number comprises 18 per cent of the entire number in the United States. The percentage of increase from the years 1920 to 1923 is about 31 per cent in the middle western section while for the entire United States the percentage increase is 32. This would indicate that the west is holding its own in the growth of the industry.

Advertising Index will be found on page 130



Two Extremely Popular Packard Marine Engines for All Around Use

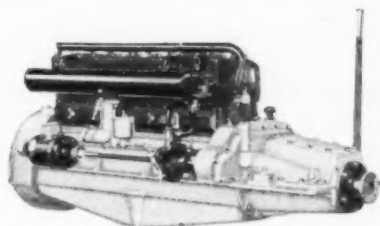
These two Packard Marine Engines couple comparatively low costs with an extraordinary versatility and durability.

They perform in a way to win admiration in any company, and they are unusually economical of gasoline and oil and free from the need of tinkering and repairs as only Packard engines can be.

In every detail, they are designed and built to Packard standards---and to give exceptionally satisfactory service under all conditions.

Write for folders giving complete mechanical details.

Marine Architects, Engine Dealers and Boat Builders are invited to write for trade discounts.



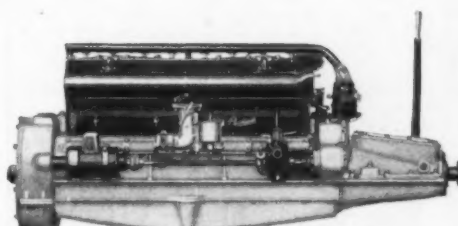
Model 1M-268
\$1500

A six cylinder engine developing 45 H. P. at 1800 R. P. M. weighing only 625 pounds.

Specially designed for Runabouts up to 26 feet in length and also suitable for small cruisers and auxiliaries.

Furnished in both right and left hand rotation for twin screw installation and remarkable for its economy and flexibility of operation.

All engines are complete with ignition, starting and lighting switch, oil gauge, ammeter, tool kit, battery, electric starter, hand starting bar and propeller shaft coupling.



Model 1M-357
\$2000

An eight cylinder engine developing 60 H. P. at 1800 R. P. M. and weighing 795 pounds.

Remarkable for its light weight, compactness and smoothness of operation. In runabouts up to 35 feet in is an ideal power plant, and for cruisers and auxiliaries.

Furnished in right and left hand rotation for twin screw installation. Absolutely free from vibration and meets all service demands.

All engines are complete with ignition, starting and lighting switch, oil gauge, ammeter, tool kit, battery, electric starter, hand starting bar and propeller shaft coupling.

Packard Motor Car Company, Detroit.

PACKARD MARINE ENGINES

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Weston Magneto Tachometer



Indicates R. P. M. at Any Point on Your Boat

This tachometer is a magneto generating voltage directly proportionate to the speed of any rotating mechanism. It accurately indicates this voltage in R.P.M. Thus makes possible having one or more indicating instruments from same magneto, located at any point, even several hundred feet, if desirable, from the machinery.

Exceptionally valuable for horsepower tests before motor is installed, for indicating speed of engine after repairs, or for making a dynamometer test of Diesel, reciprocating steam, or turbine engines to determine speed under various loads.

This is a new development you should know more about. Write for Bulletin 3004 giving full details.

Weston Electrical Instrument Co.
28 Weston Avenue Newark, N. J.

WESTON

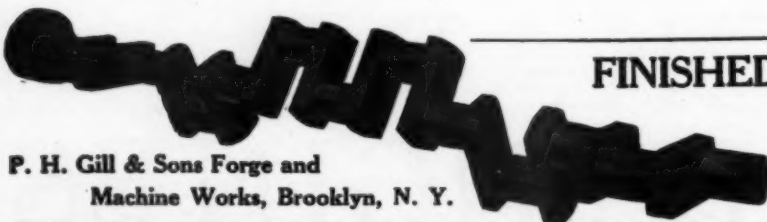
Electrical Indicating Instrument Authorities Since 1888

STANDARD-The World Over

Prospects Good for Outboard Business

Walter H. Moreton, Boston, and Olaf Mikklesen, New York City, eastern distributors of the Evinrude Motor Company, recently paid extended visits to the factory at Milwaukee. Both reported a nice increase in business for 1923.

"Prospects for 1924 are the best they have been for years," said Mr. Mikklesen. "Of course, 1920 was a big year because business conditions were good, everyone had money and the war made sportsmen out of so many men. But, then we had only one motor to sell them. Now in addition to the Standard Evinrude we have the two new Twin Outboard models and the one and two-cylinder Evinrude Inboards. With this complete line of small-boat motors I expect to do twice the business in 1924 that I did last year."



P. H. Gill & Sons Forge and
Machine Works, Brooklyn, N. Y.

FINISHED CRANK SHAFTS

We are furnishing them to some of the leading marine engine builders. Carbon and Alloy Steel, Heat Treated to your own specifications. We grind all Pins and Bearings. Forged, machined, and finished complete in our own plant. Let us quote you.

Impressions of the Big Show

(Continued from page 19)

sailor who is least a fool takes the most elaborate precautions to make his equipment fool proof.

The Fay & Bowen runabout, selling at \$1,200, made hundreds realize that while yachting is the sport of kings it is not necessarily the recreation of plutocrats; while the outboard motors—shiny aluminum machines with a convincing appearance of great capability—brought it home to thousands that boating pleasure comes a whole lot cheaper than Fording.

Among the small boats none made a better impression than the two fine runabouts brought to New York by Horace E. Dodge and called the Dodge Watercar. These boats are 22½ feet in length and are fitted with a new Dodge Brothers marine engine. These boats, selling at a very moderate price, are able to travel at 20 m.p.h. and the quality of the finish and appointments in them was equal to the best at the Show.

The boat which did the most traveling to reach New York was the 54-foot Great Lakes cruiser. This big boat which, with the big 56-foot Elco cruiser, made up the two largest individual exhibits, travelled all the way to New York from Milwaukee, via the railroad route. The big problem in shipping this boat was the various tunnels to which it had to pass. The unfortunate attendant who rode with the boat had his heart in his throat on several occasions when the sides of the hull grazed the walls of the tunnels, and he feared a tight spot in the tunnel would leave the boat there while the rest of the train went on. Had this come to pass there would have been no Great Lakes exhibit. The boat itself created a very fine impression among all the show visitors by reason of its fine arrangement and excellent finish. It was, perhaps, the only boat which is regularly equipped with radio sending and receiving apparatus.

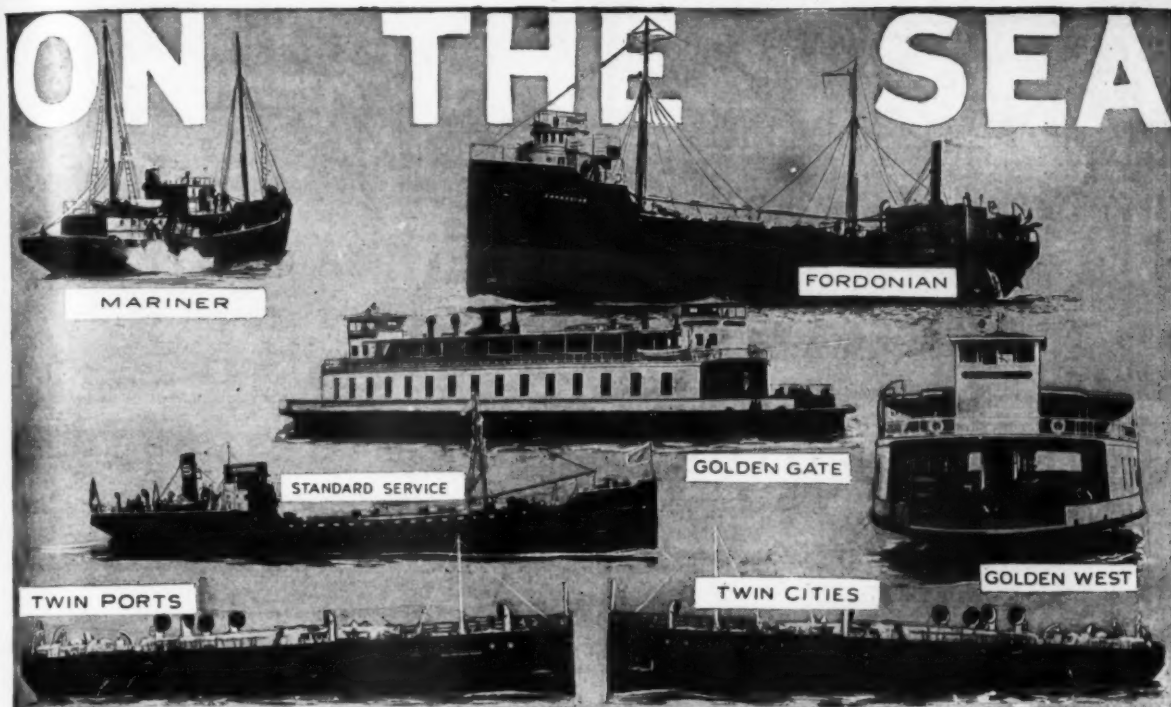
The runabouts made by the Belle Isle Boat Company, the famous Bear Cats, were there in force. Two of these boats, with their Hall-Scott engines installed, were shown as well as a sectional model of the hull construction at the transom and stern. The marvelous detail which was evidenced by the careful workmanship in the model and in the finished boats was freely commented upon. One of the boats was so supported that she laid over on her side, permitting all to examine the interior most minutely.

The Consolidated Shipbuilding Corporation of Morris Heights, had among others a specimen of their new Play boat, as well as runabouts and yacht tenders. These boats were all finished and complete in the usual excellent style of this company, and the line of visitors passing by the Play boat, was unending. Since the Consolidated Corporation are also engine builders, they showed in addition a complete assortment of the various engines which they produce. These varied all the way from 20 to 300 h. p., and made a most complete exhibit.

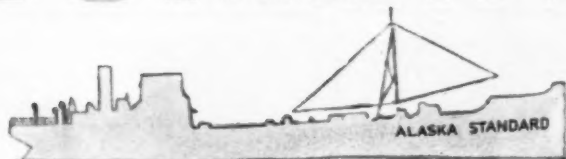
Port Elco, which adjoins the exhibition building was thrown open to the show visitors and its space became a part of the regular show. The big 45-foot cruiser was moved into the interior of the Show building, while the remainder of the Elco boats occupied their accustomed positions in Port Elco. These were a great big 56-foot cruiser fitted with twin engines, and the famous Cruisette and Vedette, each with a single 42 h. p. Elco engine. An attractive feature was the big Nelasco Diesel engine also shown in this display which was of 180 h. p., and the six cylinder type.

Among the engine builders we found practically all the prominent ones represented. The new Hall-Scott engines in the four and six cylinder sizes, developing 76 h. p. and 100 h. p. respectively, were prominent features of this exhibit. These engines seem to be exceedingly substantial and rugged. In fact they are designed for 24 hour a day service, and will without question introduce a new era in high speed continuous power production with gasoline engines. The Frisbie engines were also shown on the main floor and the regular line of these machines was on display. The overhead valve models with their dual valves, maintain their popularity, and the smaller models of Frisbie were also well liked. The new line

(Continued on page 72)



BUILDING



Steady Growth of Diesel-Electric Drive*



* All of these boats are G-E equipped. Another order has been received from the Golden Gate Ferry Company for G-E Electric Drive for two new Diesel-electric ferries as a result of successful operation of the Golden Gate and Golden West.

General Electric Company
Schenectady, N. Y.
Sales Offices in all Large Cities

Why?

Because it eliminates the reversing gear and speed changing of direct-Diesel drive, but retains low fuel consumption when running and no fuel consumption when "standing by".

Because it eliminates racing of propeller, and consequent damage.

Because a multiplicity of units permits the use of only the horsepower required to handle the load efficiently, and provides the reliability of a divided power plant.

Because maneuvering is simple and rapid with electrical apparatus, which can be controlled from strategic points.

GENERAL ELECTRIC

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The Adaptable Pump

THERE is a style and size of Oberdorfer Bronze Pump for every need. Have one installed on your motor boat for water or oil circulation system. Write for interesting book—sent FREE

Oberdorfer Pumps

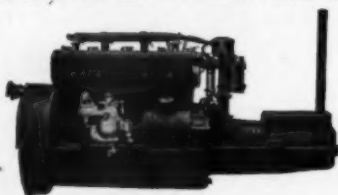
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M. L. OBERDORFER BRASS CO.

121 Thompson Road

Syracuse, N. Y.

ROBERTS MOTORS



Price of motor complete, including ignition outfit

\$250

Four cylinder, 4-cycle, 16 H.P.

Price of complete power plant, including motor, ignition outfit, built-in reverse gear, polished bronze salt water propeller outfit, and starting and lighting outfit (including ammeter, starting switch, and storage battery), \$485.00.

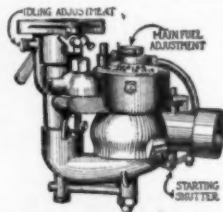
Write for Catalog and further information.

ROBERTS MOTORS 200 Arthur St., Sandusky, Ohio

MORE POWER

More power on less fuel simply because the Ensign is correctly designed to produce a dry gas that burns to the last atom.

Pays for itself in gas you save. You could spend 2 to 5 times as much on your engine without getting half as good results.



ENSIGN

Recommended by Makers of Stearns Marine Engines

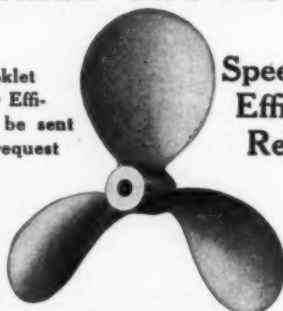
Write today for prices, stating size of your engine and whether you wish to burn gasoline or kerosene

ENSIGN CARBURETOR CO.

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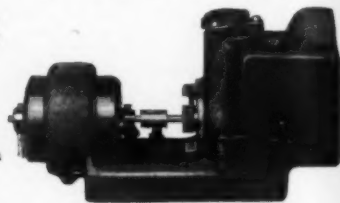
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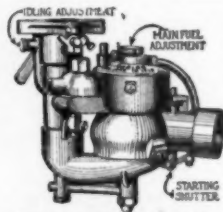
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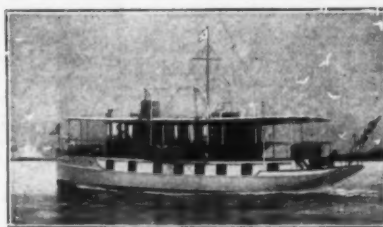
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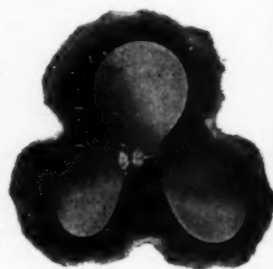
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Science is a lot bigger'n I thought

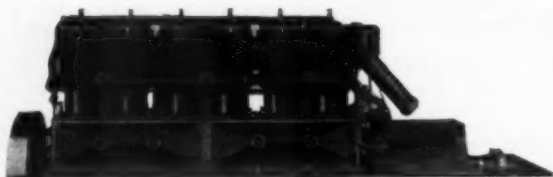
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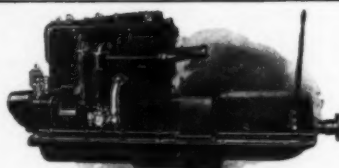
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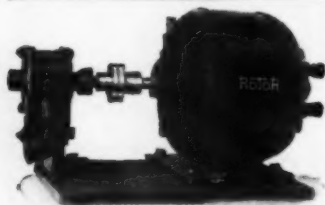
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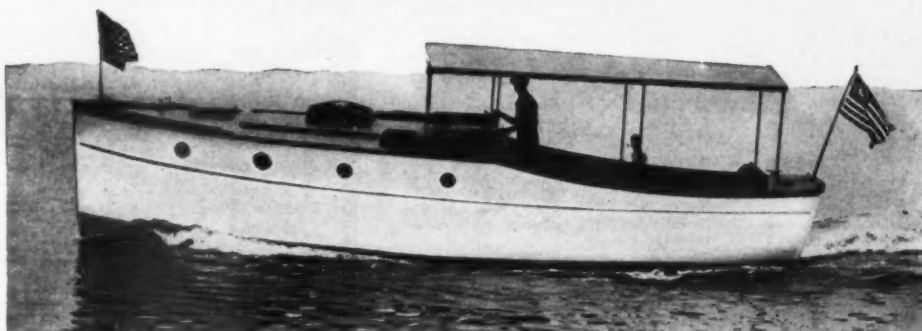
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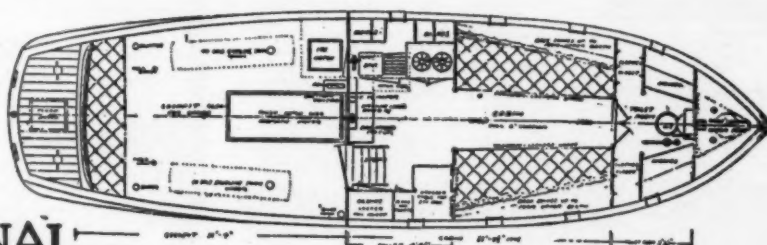


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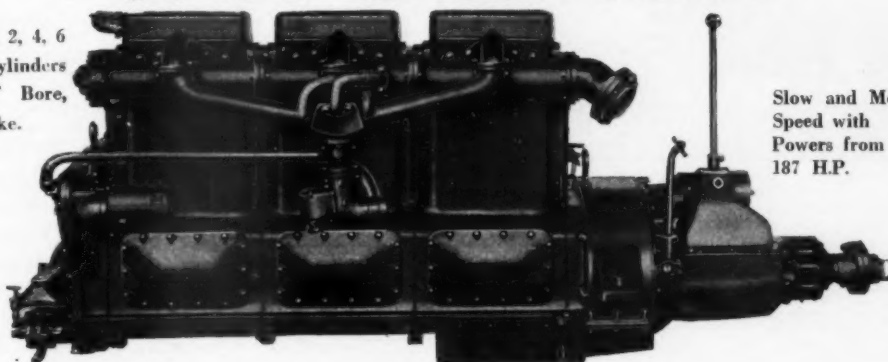


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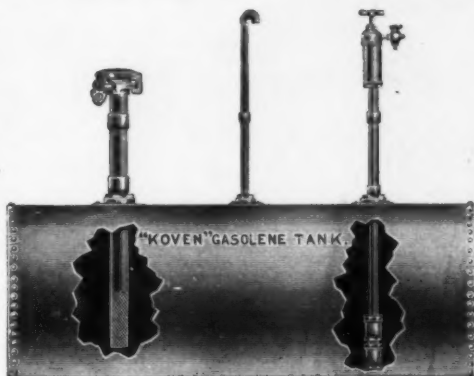


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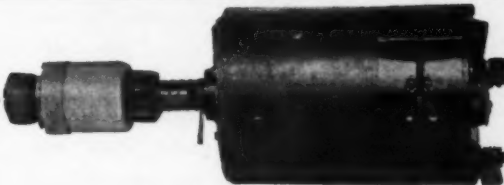


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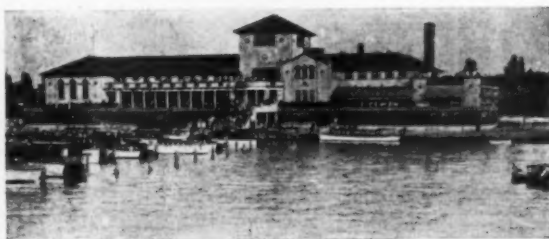
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W. D. Edenburn, Editor

**412 MORGAN BUILDING
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Impressions of the Big Show

(Continued from page 64)

of Gray engines, built out in Detroit by the Gray Marine Motor Company, included all of the two and four cycle models which this company is building, and especial attention was paid to the new model V. This high class job is an overhead valve engine of four cylinders, which embodies all the up-to-date engineering which it is possible to include in an engine.

One of the first exponents of the standardized boats was the International Shipbuilding Corporation of Nyack, who again brought one of their standardized 32-foot cruisers to the show. This boat was always crowded with an eager line of visitors and the little Kermath engine under the cockpit floor attracted its share of attention. This boat is a substantial job and an unusually large boat for its length. It has ample accommodations for a sizeable party and all comforts.

The Kermath line featured the new Rainbow trade mark and displayed one of each of their models, attractively enameled in each of the colors of the rainbow, and grouped to carry out the color scheme. The clever stunt of tying up the advertising campaign with this color arrangement attracted much attention and favorable comments.

One exhibitor who was unfortunate in his selection of space in some ways was the Wisconsin Motor Manufacturing Company. Depending upon whether one was interested in styles or engines, the Wisconsin booth was always crowded. At times when the bathing ladies paraded, the Wisconsin booth was full of spectators who crowded out the engine enthusiasts. At other times the enginemen were much interested in the White Cap four and six cylinder which are perhaps the most modern of our present-day medium powered marine engines.

In the northwest corner of the Palace was the exhibit of the Packard Motor Car Company of Detroit. These very fine engines made an effective display since they represented the finest type of modern high speed, light weight machine. They range in size from 45 h.p. six cylinder unit through all sizes up to the large 400 h.p. twelve cylinder Sweepstakes model. A new development in marine engine practice was shown here and that is the multiple valves used on the intake and exhaust sides of some of these machines. These will seem to have very decided advantages, particularly where long continuous service at high speed is called for.

One of the most businesslike craft of the entire show was the Red Bank boat powered with a 150 h.p. Sterling engine. This boat was built for service and not for beauty. It is a fast job designed to go and come without delay or difficulty. Across the aisle was found a fast Sea Sled of the usual type which was finely finished and fitted with a single large surface propeller. The smaller Sea Sled dinghies attracted considerable attention and the attendants were kept busy explaining the virtues of the Sea Sled over the ordinary type of boat. Still further to the south the entire wall was covered with an array of fine photographs showing many of the best yachts equipped with Sterling engines. On the floor were a complete line of Sterling engines, including a cutaway sectional model which was kept moving to show the relation of the various parts, valves, pistons, etc. The Dolphin, Trident, and Neptune engines as well as the Sea Gull and Viking models were very handsomely finished, and were under constant examination by interested show visitors. These machines are made in two, four, six, and eight cylinder sizes and the wants of any conceivable engine user can be readily filled from among this assortment.

On the east end of the building was shown for the first time the new Standard Diesel engine, which is an unusually fine example of heavy oil engine workmanship. This machine is of the slow speed type, and without a doubt will give an excellent account of itself in service. It is designed to burn fuel oil and operates on the four cycle Diesel principle. In addition were shown the regulation line of gasoline engines from the smallest to the largest which this company builds. Also a little further down the aisle was the exhibit of the Scripps Motor Company of Detroit. It is consisted of a typical engine of each of their different models, and included the D-2 two cylinder machine of 4½ by 6-inch bore and stroke, the F-4 medium and high speed machine in a four cylinder size developing up to 60 h.p. as well as the E-4 and the E-6 developing 70 and 100 h.p. respectively. These engines enjoy a very enviable reputation and a crowd of interested spectators was always observed clustered about them and studying their fine points.

If one may base a prediction on the general showing at the Palace it is this—1924 will witness landlubbers flocking to small boats in greater numbers than ever before, more ex-landlubbers graduating to medium-sized boats, and more seasoned mariners taking post-graduate courses in high speed runabouts and express cruisers. It will be good boating weather in the North from April to November, and for those who sail on auxiliaries the wind will always be brisk and fair. The barometer will be high, and all owners who feed gasoline and oil to their power plants and remember to turn on the ignition switch before starting will know the full meaning of motor boating happiness.



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 Chart No. 23—Biscayne Bay, Florida
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 Chart No. 27—New Jersey Coast, Cape May to Little Egg Inlet
 Chart No. 28—New Jersey Coast, Little Egg Inlet to Bayhead
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 Chart No. 33—Delaware Coast, Cape Henlopen to Chincoteague Inlet
 Chart No. 34—Virginia Coast, Chincoteague Inlet to Cape Charles
 Chart No. 35—Virginia Coast, Cape Henry to Albemarle Sound
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Chart No. 38—North Carolina Coast, Core Sound to New River Inlet

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The Petrel's Nest

(Continued from page 22)

There was less organization and more openness of heart in those days, she reminisced. And then she recalled that dreadful night when the body of her husband had been swept upon the shore.

She must have lived thus in the past for some twenty minutes for the boom of the coast cannon roused her. "They're shooting the life-line," she cried.

She was like a war-horse sniffing powder. She could no more have stayed indoors than she could have slain a babe in arms!

When she had flung on some clothes she ran down the hall to young Mrs. Cappy's room where she knew there were some oilskins. Receiving no answer to her knock she opened the door, calling aloud. There was no response.

Fumbling for some matches she made a light. The room was empty.

"She went for a sail with that young man," Mother Baily recollected, and then suddenly it came to her that perhaps the distressed boat was his—and Cappy's wife on board! Cappy himself was on duty—he would find them. He was an unsuspecting, patient man but once angry he was like one mad—he'd kill them both—if he found them there'd be no saving them—he'd be disgraced—dismissed from the service.

These fears racing through her mind, Mother Baily wrapped herself in a short nor'easter and went out into the storm.

Her body bent before the gale, the rain beat in her face. The island quivered and shook; at any other time she might have joyed in the wildness of the weather; now her mind was too distraught to be conscious of the elements. Earlier when she heard them talking on the beach she should not have kept silent—it was wicked of her not to have interfered. Now there was nothing she could do—nothing. But she pushed on through the raging storm. Though things had got beyond her helping, she was going to the beach just as she had a hundred other times in those days long ago. She must be there and see it all again. Perhaps in some miraculous way it would be given her to help.

She was nearing the lighthouse when a white flash showed a boat on the bar, the waves pounding and thrashing over her.

She guessed instantly what had happened. A pleasure yacht had gone out over the bar in the moonlight when the weather was mild, had been surprised by the sudden shift of wind and the storm; when she'd attempted to return there was not enough water to float her as the tide had receded. Now she lay stranded there with the waves beating over her and that fierce, rushing, deep gulley treacherously between the bar and the shore.

"I hope there aren't many aboard for the sea's so wild it'll break her up before long," she cried, and tried not to think of Mrs. Cappy's empty room.

The sky seemed to open again; this time showing the beach-cart, men running to and fro and straining at the breeches buoy line.

"He'll kill her—kill him," she cried, running frantically through the soft wet sand.

The jetties that had been built to protect the lighthouse straggled in a shaky line from several yards out to sea to the very base of the Light. The incoming sea swirled and eddied in and out the poles, sending up spray that fell heavily upon the beach. Mother Baily either had to walk up close to the Light where she could climb over the jetties in the dry sand or watch her chance to scramble through lower down when the waves receded. She chose the latter.

Keeping her eyes so closely upon the sea, they had gradually become accustomed to the darkness and able to distinguish the white foam of the breakers, even objects floating. She was thinking that she must get round those jetties to the beach where the Coast Guards were working. If young Mrs. Cappy was on that boat and if she were there—perhaps—perhaps—she scarcely knew what she expected to do only that she must be there. But the waves came so swiftly one upon the other that it seemed impossible to get through.

She was turning to go up toward the lighthouse when a dark object bobbing back and forth in the whirling waters that raced through the jetties caught her attention. At first she thought it some piece of furniture washed overboard but at a sudden greenish flash of lightning she saw with horror that it was a body. In terror she watched it toss back and forth, catching now upon one post, now another.

Perhaps there was yet life in it and here she stood offering no aid!

When she was able to throw off the first shock and horror of the sight she crawled on her hands and knees from one post to another, dragging herself out to where the object lay, caught between two jetties. She reached down, catching at some clothing and holding firmly made her way slowly back toward the dry sand, her soul harrowed by the gruesomeness of her task. More than once it seemed as though the effort were too

(Continued on page 80)

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REG. TRADE MARK

The beard here represented was placed in the water at Port Royal, S. C., by me and left in the water five months. The painted end was as good as when it was placed in the water.

Mills Edwards,
Master,
Schooner Florence
Shann.

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10-14 Horse Power
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Completely Equipped to Run

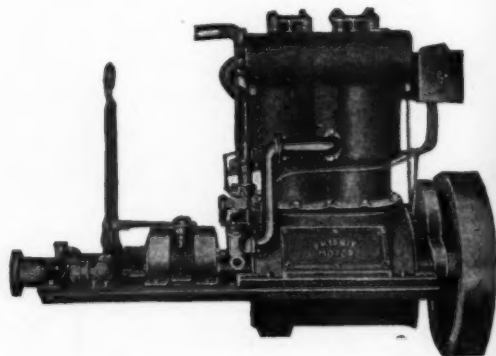
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Advertising Index will be found on page 130



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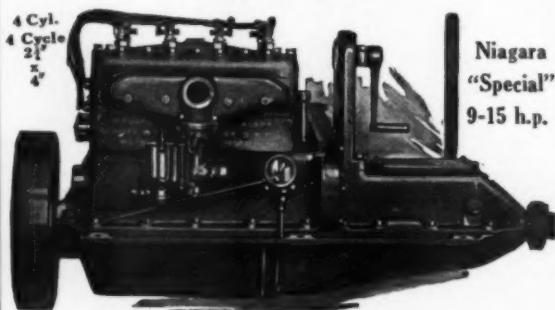


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Niagara Engines for Larger Types of Boats

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**Niagara
Motors
Corporation,**
206 Niagara Blvd.
Dunkirk, N. Y.

The Petrel's Nest

(Continued from page 76)

much for her feeble body but the strength of a lifetime for those few minutes appeared to rush back to her.

She let go her ghastly burden as soon as she reached the edge of the waves and scrambling breathlessly down to the sand knelt beside it. Her hands touched the soppy, clammy corpse of a woman and she drew back shuddering, her blood turning cold. She did not have to wait for the next streak of lightning to know its identity.

"Mrs. Cappy—Mrs. Cappy!" she screamed.

Though nearly exhausted she tried some methods of resuscitation which every Barnegat woman of her day included in her education; she could not believe Cappy's wife was dead. But the lungs had filled with water—the heart had stopped—there was no saving her.

Suddenly a mood as violent and wild as the storm possessed her. Why should young Mrs. Cappy who thirsted and hungered for life be lying dead by the sea that she hated while she whose life was lived, who must in a few days go back to a strange and hated city, to an empty existence far from the sea that she loved, stood safe and well upon the sands? Why was even death unjust?

A great light swept toward them. The coast guards were searching the beach. Soon Cappy and the others would come. Everyone would know that Cappy's wife had been on the yacht with its handsome young owner. Added to the sorrow of his wife's unfaithfulness and death would be public humiliation.

She could hear the shouts of the men. They were coming nearer and nearer. Perhaps even now she and that terrible, tragic corpse at her side had been seen! They would ask her—she would say that the body had been washed ashore—they would guess. She kept repeating these things over and over again along with frenzied exclamations about Cappy who could never love again—never forget. He was like that—his faith and his love could only be broken once. Poor Cappy who had been so kind—Cappy who understood her better than her own son—Cappy who had mended the seagull's wing!

All thought of self had departed. She thought only of saving her good friend's faith. He must never know the truth and it all hung on her!

The waves were creeping up over young Mrs. Cappy's body, moving it gently.

Shuddering, Mother Bailly pushed it forward where the deeper water tossed it to and fro yet could not release it from the jetties.

She heard men shouting and just before they reached the jetty she flung herself into the shallow water, her body shivering as the cold waves washed over her. . . . Soon someone was bending over her. Then all fell into darkness.

A soft west wind fluttering the window shade and the pleasant crooning of a mild sea were the only sounds that came to the little low-ceiled bedroom with its walls varnished like the deck of a ship and hung with fishnets and polished shells.

Mother Bailly opened her eyes. She was in bed and a professional looking gentleman sat by her side. After considerable consideration she decided he must be her son.

"Jason," she whispered, her hand fluttering out to him.

He clasped it silently and she was content for a time. Then—

"Strange you're here—you never liked Barnegat."

"You shouldn't have run off like that—you little old tar," he answered smiling. "I've been here with you a week. You're just getting out of the worst case of pneumonia I ever saw."

It took some time for these facts to sift through her dazed mind.

"I just had to get back to the sea; I've wanted to—oh, for ever so long. I reckon I just belong to this old island," she said presently.

And then it came to her that she must soon leave this house that she loved. Yes; Jason would want her to go back with him. But surely in this month she had gathered strength, she could go back to the city carrying in her heart all the dear sights and sounds of her island and her sea. But oh, to live here forever—

She raised her hand to her face.

"Even indoors you can feel the salt on your skin," she mused and her resolution wavered.

Then she saw Cappy coming toward her and all the terrible memories of that wild night on the beach swept over her. Had her subterfuge failed? Did Cappy know the truth? She put out her hand. He took it, kneeling by her bed.

He was more grave-faced and serious than ever and his hair was white instead of black. Looking in his eyes she saw pain and suffering but no bitterness, no hatred, no humiliation nor fear of being hunted. He did not know—she was sure of that for if he did there would have been, instead of the calm of resignation, the hunted look of the criminal—indeed he would

(Continued on page 84)



**A tumbler full of
Colorado River
water**

will deposit 1/4" of silt in about 5 minutes. Yet Goodrich Cutless Bearings operated for two years on this river, using its water as a lubricant.



Two Years Service in the Muddy Colorado!

Certainly remarkable performance—impossible in anything but a Goodrich Cutless Bearing.

The photographs show an interesting type of shallow draft boats, Cutless Bearing equipped, constructed by Fellows and Stewart of Wilmington, Cal. They draw 14" of water with a 1,000 lb. load. Two of these boats operated for two years on the Colorado River in connection with the survey being made for the Big Boulder dam, power and irrigation project.

The water is so dirty that it couldn't even be used for cooling the Motor, yet Cutless Bearings took it the whole time *as a lubricant*—and not a single bearing was replaced!

Cutless Bearings have proved their superiority time and again. The tough Olivite Rubber surface when wetted has a less resistance than an oiled babitted surface; it absorbs vibration, prevents shaft scoring and gives far longer bearing life.

Write for full data—Cutless Bearings merit your closest investigation. No size limitation—supplied for any size craft.

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Goodrich Cutless Bearings

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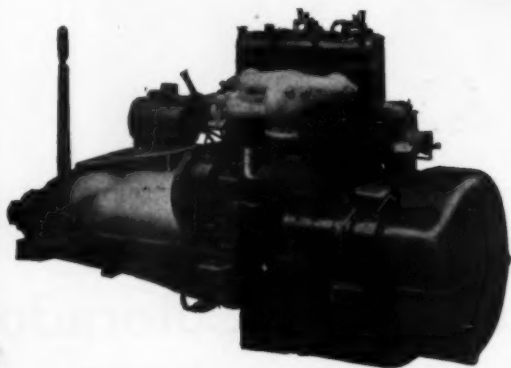
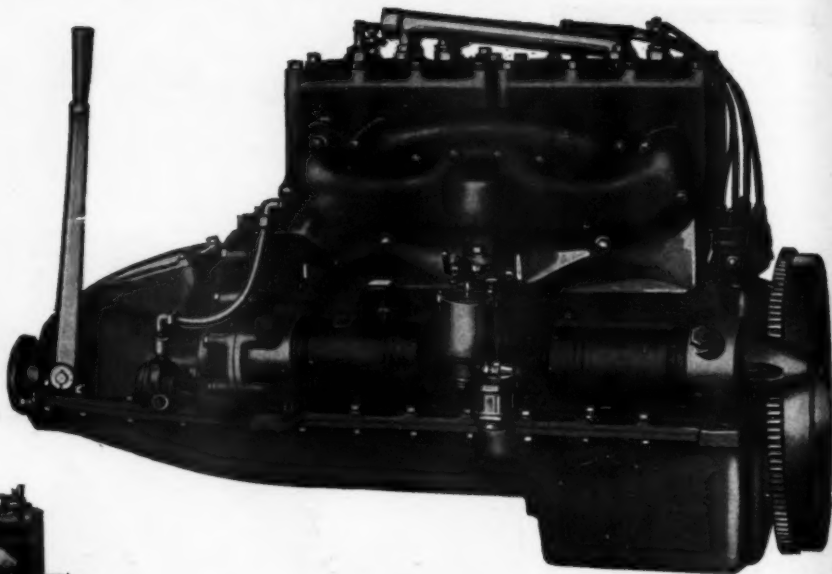
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MODEL F-4

\$750.00

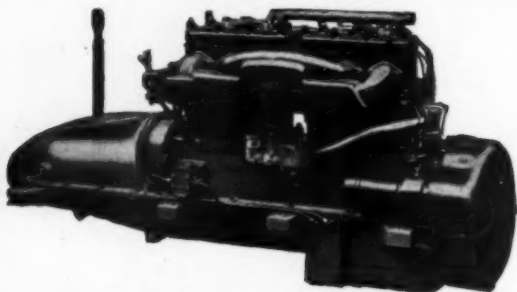
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Medium Duty
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High Speed
Weight 550 lbs.
Length 44"



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15-18 H.P. High Speed
Including Electric Starter

\$650



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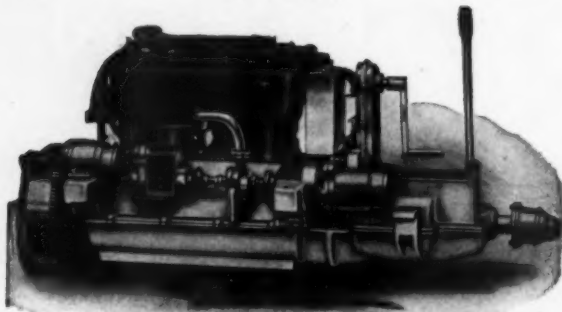
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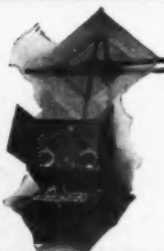
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BOAT SUPPLIES

Advertising Index will be found on page 130

The Petrel's Nest

(Continued on page 80)

not have been there at all—the law would have had him for killing the man who had taken away his wife! To see that look of unshakable faith, to know that he believed in the love of his dead wife was worth any risk she had taken or ever could take!

"Oh, Cappy," she burst forth at last, "it was all my fault. When she heard me getting ready to go out she came into my room. I told her how the Barnegat women always used to go out on the beach when there was a wreck so they could help their men. She said she wanted to go. The tide was high by the jetties—we should have gone up the beach but we were in a hurry so we tried to get through when the waves went back. I went first—I don't know what happened—only that she screamed and when I looked back she was in the water and the waves were breaking fast and high carrying in great pieces of timber. I tried to reach her hand—a floating log must have knocked her unconscious—she disappeared in the water—"

"Don't try to talk about it," Cappy said huskily, but his eyes gleamed triumphantly.

"We thought you two had attempted to get round the jetties and that Cappy's wife had been caught by the incoming waves. A giant wouldn't have a chance caught between those poles with the water eddying through them," she heard her son say. "Were there any other lives lost?" she asked after a silence.

"Fortunately there was no one on board but the captain and the owner and they both were saved. The young man attempted to swim the gulley which was madness—when the life guards got to him he kept shouting about saving someone—but he was out of his head. His fiancé came down the next day—they've both gone back to town."

"Poor Mrs. Cappy," Mother Baily murmured.

Perhaps death wasn't unjust!

"How would you like to stay here with Cappy and the boy and keep house in the Petrel's Nest?" her son was saying.

The west wind murmured about the house, the ocean whispered softly and Mother Baily, a tranquil smile on her face, rested in her pillows.

"Cappy," she whispered gently, "you and I are storm birds an' I calculate we'd better keep right on stayin' where we belong—here in the Petrel's Nest."

Adventures of the Motorboaters

(Continued from page 26)

kindred spirit in this lazily adventurous fellow.

He was one of those men you like intuitively, long before you have plumbed their depths through conversation and everyday contact. He was, we would observe, the highest type of true motor boat enthusiast. Perhaps fascination lay in the fact that he kept much of his personal story to himself. We never knew, until our cruise was over, the true significance of his sudden friendship for us . . . the real reason why Thomas Thomas came into our lives.

"Nice little boat you have there," he called, filling his cornucopia, "shoal draft type and just fitted for these waters. But I was watching you come down the channel and across . . . that pilot of yours should remember that these sand bottoms change radically every time we have a stiff three-day North-caster."

He squatted on the dock and looked Drusilla over critically. We were not afraid for him to do so, for despite her recent buffeting and several narrow escapes on hidden piles, southward bound (particularly in rivers and canals), she looked almost as ship-shape as when we had taken her from refitting and overhauling in the yards.

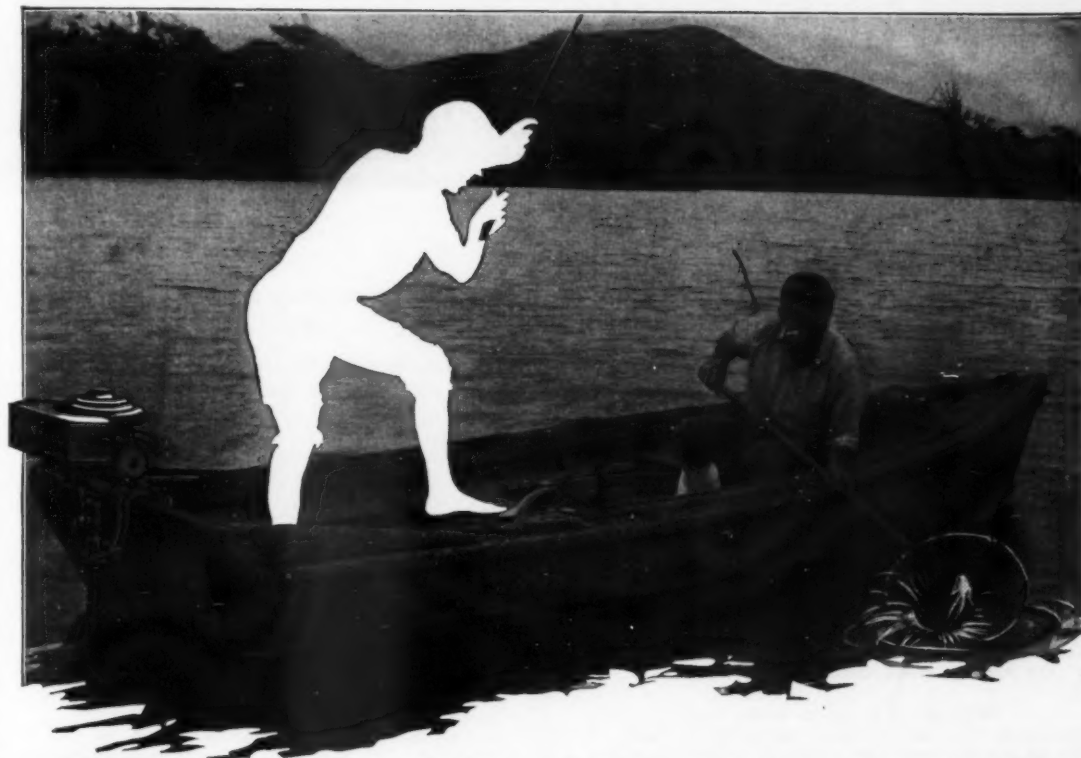
"Nice, steady girl," he said, aloud, "well built. Good carrying capacity—she deceives you—doesn't look it at first. All right for shallow or deep water, but I can say this much—it took real seamanship to bring her down . . . you're just from the North, I take it?"

Pete invited him aboard. Although the boat was ours, in fifty-fifty partnership, his superior knowledge of all problems of motor boating had long since given him the captaincy.

We allowed our visitor the run of Drusilla, showing him the large, comfortable cabin, the generous deck room, the motor forward, in its separate compartment, and the cozy bunks for a party up to six. The outside afterdeck was spic-and-span neath the dun-colored canopy, and the double-planked mahogany glistened from frequent cleaning. We were good housekeepers on Drusilla!

"It's a 50-55 h. p. Kermath, eh?" Thomas Thomas observed, "takes you 17 miles per hour and better. Not much, but well enough for down here. I'd like to own her. Got a second-hand Cruisette of my own in the North. Miss the

(Continued on page 88)

Sport
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Why Should'nt this be You?

Make your winter day dreams come true—those dreams of early morning fishing conquests, of week-end exploring cruises, of midnight bathing and beach parties. How quickly a vacation of this kind brings back your vitality—and what sport it is.

No tiresome rowing for you—a compact, little, 40-pound Evinrude Sport Twin will do your oar-work. At the first pull of the Easy Starter your boat glides away—smoothly, quietly. Plenty of power and speed. Automatic Reverse—from forward to back by simply pressing down on tiller. Built-in-flywheel Magneto—no batteries. Safety Tilt-Up makes beaching easy—protects motor.

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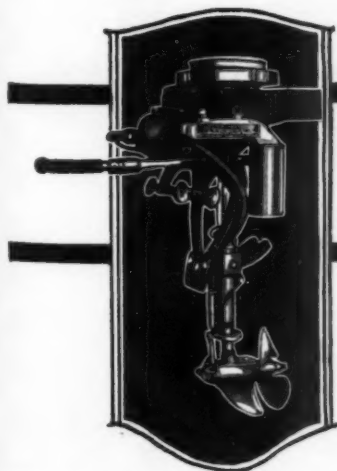
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Stearns
TRADE MARK

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Gentlemen: Att'n: A. T. Nabstedt.

In reply to your letter of the 4th we are making shipment of engines to the Snow all equipped with your reverse gears and would call your attention to our 4-page advertisement in this month's Motor Boating.

Will say that up to date, I am thoroughly sold on your gear as being the best that we can buy for this purpose. Our recent dynamometer tests show a considerable reserve capacity; we have set your #141 gear in a power plant capable of exerting a torque of 325 foot pounds at 925 RPM and it picks this load up very comfortably with only nominal pressure on the plates, which is very gratifying to us.

Sincerely yours,
Stearns Motor Mfg. Co.

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GFS-MS

Engineer

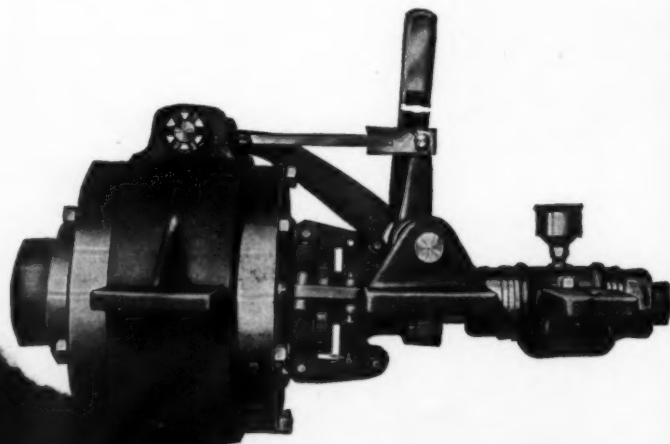
If your engine is not already Joes equipped, it can be easily. Just call at the nearest Joes Distributors; or tell us make of your engine, number of cylinders and bore and stroke, the size of your boat and what you use it for, and we will recommend the size and type of Joes Gear that will give you the best service. For sale by all motor boat builders and accessory dealers.

Continued on page 81 of Joes Reverse

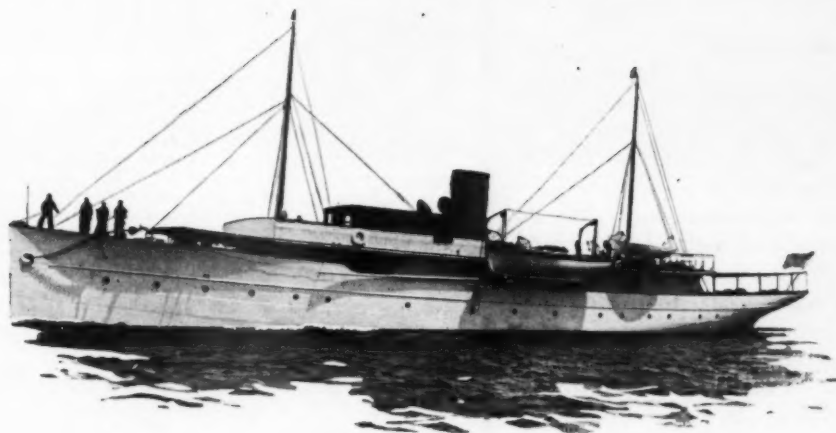
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Adventures of the Motorboaters

(Continued from page 84)

baby. I never feel at home on dry land."

The upshot of it was that on the third day we had invited Thomas Thomas to join our party. There was some suggestion that Captain Mock might be called south at any time (his boy was alone, and operating the boat down there) and the newcomer was familiar with the waters between Jacksonville and Key West. Thomas Thomas accepted under one condition only—that he write out a check, then and there, for his share of expenses. We protested, but he had his way. Moreover, from the very first, he insisted upon work. No task was too menial for him. But of his life we knew nothing—and were not inquisitive.

It was tentatively decided to remain in our present port for at least a week. It was a charming little old town, divided as to interests, between big hotel social activities and a sort of drowsy, lulling, historic sedative, acceptable to us after the trip down. And there was fishing! I was the angler of the party and could not wait to get a line overboard.

Captain Mock had duties ashore which would occupy him for a day, and we settled upon a short run over to the northern end of Anastasia Island, after large whiting, trout, black fish and—more important still—sheepshead of satisfactory size, with a possibility of drum. If the weather permitted, and we got away to an early start, we might troll on the outside. Thomas Thomas volunteered as pilot in the captain's place.

Plans were completed after supper, while lounging aft, with our pipes and our confidences.

It was then that I ventured to repeat the unforgettable reproach of our ex-commodore of Bar Harbor.

"According to this man," Peter added, after I had told my story, "motor boat fans are excrescences, barnacles, on the hide of all humanity. We are no good. We sap the ambition of youth and the honest efficiency of mature years. We are bound nowhere in particular, and we accomplish nothing in particular. We just waste time."

"Must be a frightful old crab," mused Thomas Thomas, "but, as I understand it, you fellows are down here for your health. What better excuse could a man have! That's reason—that's legitimate purpose. Ninety-nine times in a hundred a motor boat is better than a doctor."

Thomas Thomas was sympathetic. He understood.

But as he struck a match and lighted his cornucopia, I imagined I caught the flicker of a whimsical smile on his face. Its true significance was as hidden, as subtle, as Thomas Thomas himself.

"So the commodore cries down motor boats because they serve no genuinely constructive purpose?" he declared, half to himself, "that's good. That's good!" And the matter ended there—for the time being, at least.

We were off and away shortly after dawn on the following day—a balmy, soothing, purring sort of a day, stirred into gentle action by a mild and perfumed breeze from the south-east. Thomas Thomas took the wheel while we kept alert watch on the wonders of July weather and scenery, in one of the worst Marches the North had suffered for many a moon.

Cautiously we crept out to the channel, to the southward of Bird Island, on which multitudes of aquatic fowl were preening themselves for the day's food-foraging. The light-house on Anastasia had caught the first yellow reflections from over the great waters and was silhouetted against the strangely kaleidoscopic sky. The tide was going out through the cut at a merry rate, and it seemed to fairly sing as it whirled around the jetty rocks.

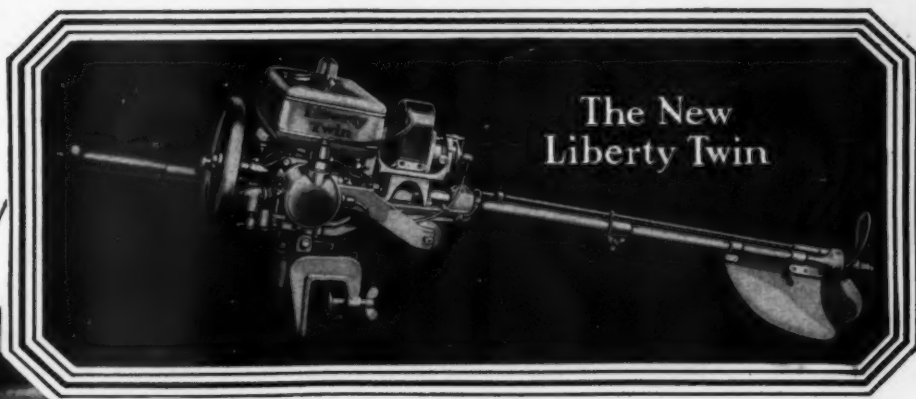
Thomas Thomas did a strange thing. When we were within a quarter mile of the narrow line of creamy breakers he turned back, and we rounded Bird Island, eventually anchoring in a deep cove north of the tapering ridge of the sand. In ten minutes the anchor was overboard.

"Suppose we try for whiting here—first," said Thomas Thomas. "Use hand lines and the shrimp. If there are any at all, you'll get 'em just here, if the tide isn't too swift for us—maybe the leads won't stay on the bottom."

To this day, and for many days to come, the suspicion holds that Thomas Thomas knew very well indeed that no hand-line lead sinkers would stick around for bottom-fish, with a tide running like that! Out and out went yards of line, until there was no more of it, and, in the meanwhile, Thomas Thomas was looking toward, across the misty waters of the Matanzas, aided by a pair of disreputable old binoculars which had mysteriously materialized.

"There they come!" was his ejaculation, and at the same moment we were conscious of a distant aggressive put-putting, in one tremendous oratorio of gasoline-engine fervor. "We can watch them nicely across Bird Island and as they make for the cut. Sassy little devils! Make zippy time. It'll be quite a procession. Keep your lines overboard and on this side of

(Continued on page 92)



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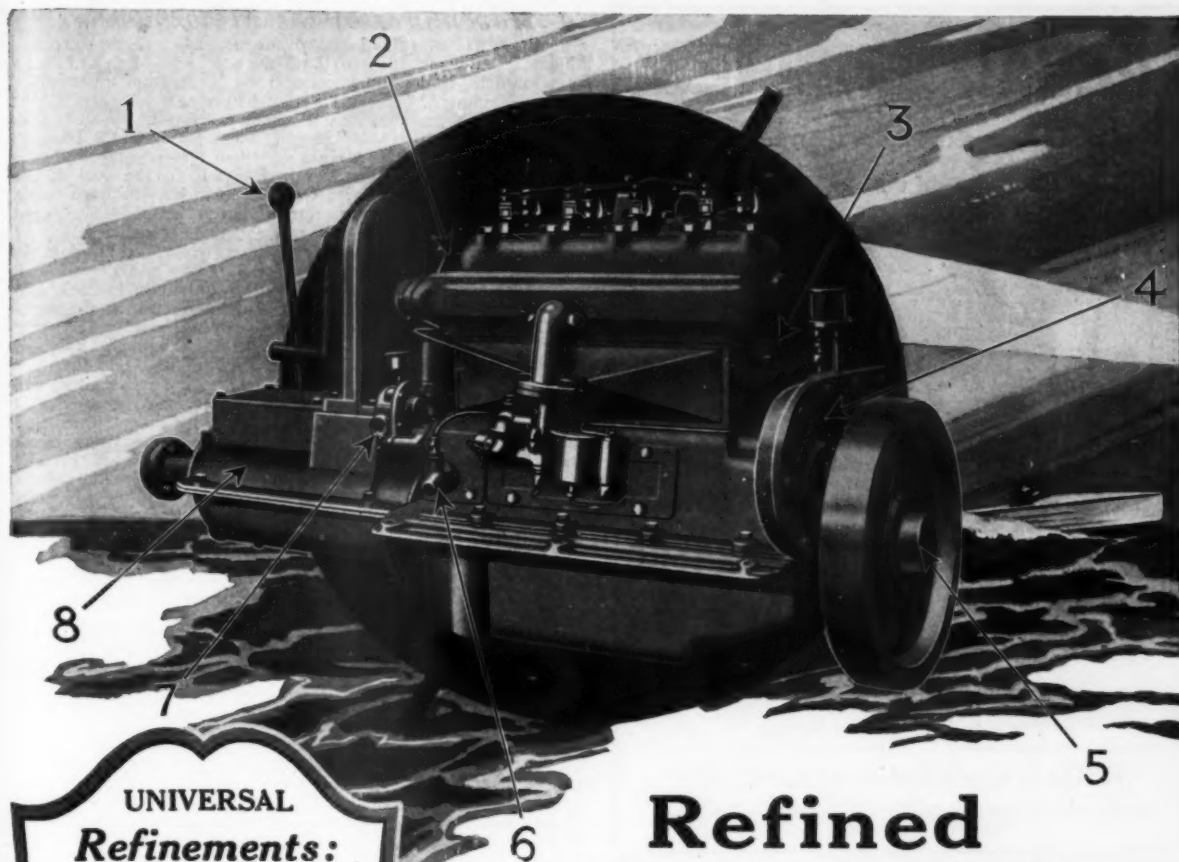
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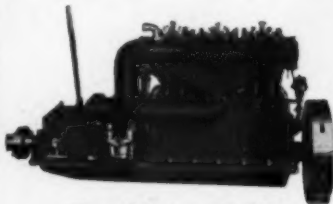
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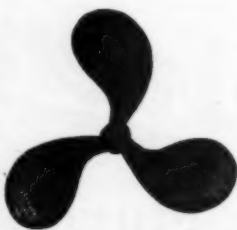
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Adventures of the Motorboaters

(Continued from page 88)

the boat. I want them to think we are early birds out for a mess of fish—if they do happen to see us through the mist."

"Rum runners?" queried Pete, whisperingly.

Thomas Thomas smiled and shook his head.

"Nothing like that—the Shrimp Fleet. Fifty-eight boats in all. Think of it! Fifty-eight of them. Every morning the weather permits they go out; back again, in the cool of the evening, loaded to the brim with their catch. It's hard work, with nets, and a long ways out in choppy water." He raised his binoculars frowning, "the wretches!" he concluded.

For my part I cared less for fishing than for an uninterrupted view of the picturesque fleet. One by one they passed, seen over the noisy rabble on Bird Island, only to fade into the mist beyond the line of breakers at the mouth of the cut.

"Fifty-nine, or my count is off," gasped Peter.

"New ones every little while from Fernandina," explained Thomas Thomas, "the shrimp are running fine."

It was impressive out there, as we retraced our course, and again stood off the bleak and lonely shore of Anastasia. Old Ocean is gradually eating it away, smashing down jetties and laughing at bulkheads, and one approaches the white beach with trepidation, for mangroves, which once stood proudly on firm soil, are now treacherous underwater perils, where water might appear to be thirty feet deep and is navigably less than this because of the up-standing roots, gnarled elbows and writhing daggers of wood. But as the sun came out, and as the tide came to slack, we anchored Drusilla to the center of the channel, and went in near the Anastasia jungle shore in our small boat, and had three and a half hours of real fishing.

Peter, although a novice, brought in eleven very fine sheepshead, the smallest weighing four pounds. I was less fortunate with the big fellows, but did abundantly well with black fish, small bass, no less than seven beautiful trout, and large whiting to the point where I stopped counting. Thomas Thomas smoked his cornucopia and watched us.

He stirred from his indifference, however, when we landed on the beach, built a fire up amongst the mangroves, live oaks and bays, and cooked as fine a mess of fried fish as ever the angling motorboater could wish. Thomas was a chef supreme. It was his feed, and he did it handsomely. (He had been thoughtful enough to bring along two boxes of breadcrumbs, and the fry was southern style, golden brown, crackling!)

"Could your Bar Harbor commodore accuse us of being motor boat wasters, if he could see us now?" smilingly suggested Thomas Thomas. "That's the real fun and sport and profit of cruising in this section; there's always an objective. I would call this one. And the spirit of exploration possesses us. We are seeing the world, gentlemen."

The expedition smoked and dozed and recuperated from an over-indulgence in fried fish until half past one, at which time the tide was getting busy in the channel again, and the hint of a puff from the north raised the line of whitecaps at the mouth of the cut to the point where they made a frothy hedge from Anastasia Point to the tip of North Beach. I had not forgotten our friend's hint of a trolling try outside, and at two we passed through the cut and headed due east, with as much ardor as though our nearest stop was to be tropic isles in the sea.

Three miles of this—and rather choppy, too—and then southward, until I began to see why Thomas Thomas was less interested in my grouper line astern, than in the sweep of wonderful water. We had caught up with the shrimp boats! There they were, scattered over the lonely ocean, bobbing like little corks, as the nets were drawn in, and the grounds systematically covered.

Once we came so near one of them that Peter could shout a cheery challenge, as he held up a sizable sheepshead, while Thomas Thomas, who was still at the wheel, his soft hat pulled well down over his face, suggested that I show them my strings of whiting and trout, which I did with no little pride.

Now down the island, often within reaching distance of the foliaged shore, where the beach narrowed and disappeared, and plumes of bays and live oaks rose above the more straggling mangrove thickets. It was leisurely, almost indolently, done, and I found myself thinking of the commodore.

Thomas Thomas now began to use his binoculars, and at last we turned about. Against the horizon were the dark masts of the shrimp boats. They were all homeward bound, their snub noses turning in at the cut.

"Joining the procession, eh?" inquired Peter.

"From now on—watch—keep your eyes open," commanded the pilot; "you thought we had luck at fishing in the channel this morning. Gentlemen"—he invariably used the word when addressing us—"I remember when your line would not reach the bottom before a gang of hooks would be full of trout,

(Continued on page 94)

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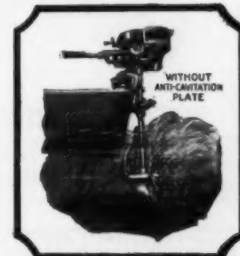
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Advertising Index will be found on page 130

Adventures of the Motorboaters

(Continued from page 92)

whiting, black fish, sheepshead—much larger ones than you caught. And you could go out there—or any other part of the river or surrounding waters, when the tide was anywhere near decent—and catch your fifty or your two hundred in a few hours. All that has changed. We were luckier today than most fishermen are. That bad northeast storm must have driven them in. But then the sheepshead go crazy over the white sand bottom under those mangrove roots. No—the fishing is bad—and it's getting worse by the hour. In fact, I would call conditions in that direction a blooming shame—a disgrace!"

He brought his big fist down on the cabin with a resounding bang.

"I don't think I get you," Peter put in, surprised. I was every bit as interested—and perplexed.

"Wait—and see!" was the quiet rejoinder.

It was after four when the last of the shrimpers darted over the surf at the mouth of the cut. We had trailed along, now here, now there, but always—under our pilot's direction, presumably busy with our trolling lines—and our own business. It was obviously not Thomas Thomas's wish to have Drusilla appear a snooper. Every movement we made was casual.

I make it as a statement of fact that never have I witnessed a more remarkable, a more sickening scene than during the hour and a half we trailed the shrimpers from within a mile or two of the cut, to the jetties.

First there had collected over and around and behind and literally on those shrimp boats a cloud of aquatic fowls, so dense, so multitudinous, so swiftly accumulative as to volume, that the sky was blotted out in places, and all the surrounding area was made hideous with their cries. Thousands upon thousands of ill-natured gulls of several species swept into sight from nowhere, at the homeward turning of the shrimpers, and relentlessly followed in their wake.

Pelicans, lumbering heavy-headed, swift as lightning in their downward plunges, materialized from the nearby mangrove swamps as if called by a gigantic dinner bell. I have never seen so many pelicans before! Flocks of sandpipers noisily joined in the general babble, and there were countless numbers of beautiful blue herons, strongly contrasted, in that mad, fluttering, tempestuous, shrieking, procession of birds.

On Bird Island, as I looked through the pilot's binoculars, I could make out another mighty collection of them, waiting impatiently.

The marshes and the mangrove swamps that fringed certain parts of Anastasi were white and grey and delicate blue with the same astounding flight of aquatic fowl!

"Never saw anything like it in all my days!" gasped Peter, who was customarily very phlegmatic and difficult to excite; "they are after the shrimp, eh?"

Thomas Thomas ran Drusilla in close to the last shrimp.

"There's your answer," said he, "and it's one of the real crimes of Florida. That's why the fishing is bad most of the time. That's why certain kinds of fish in this section are sure to disappear entirely, if something isn't done soon. Every pelican for a hundred miles has come up here to the banquet—and a few years ago you seldom saw one on this piece of coast line. They're more of a gulf-side bird. Go back into those swamps at night now, and there isn't roosting room for the mob. Gulls! My God! Look for yourself! Clap your eyes on the deck over there—now! See!"

A man with a dun-colored mass of net was shifting on the deck of the shrimp—wooden pails were jogged as far aft as they would go—and something silvery, shimmering, gorgeous in the afternoon sun, went spraying over the stern—fish! Little fellows, by what seemed to me, the millions! It was a rain of shiners and minnows.

And at the self-same second, with a united piping of quarrelsome eagerness, the gulls, pelicans, herons and other birds swooped downward to the green waves!

"I'm going to supply you with some material to tell that Bar Harbor lunatic of yours," said Thomas Thomas, laconically, his teeth grinding down on the stem of the corn-cob; "from this on Drusilla has an objective!"

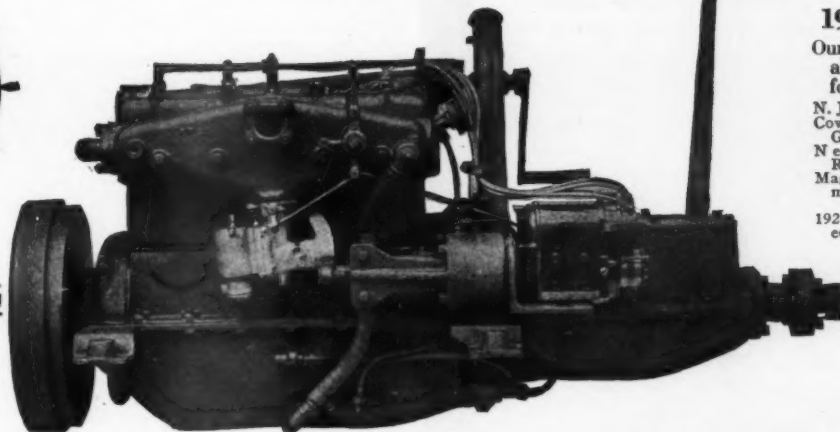
(To be continued)

Johnson Motor Wins Races

The Gruber-Morris Hardware Company of Daytona, Florida, entered a Johnson Motor in the races recently held at Rio Vista, three miles north of Daytona.

They report the Johnson carried off highest honors, winning three firsts, including the free-for-all. The prize in the free-for-all race was a silver loving cup, donated by Walter Hardesty, capitalist and builder of Rio Vista. The Gruber-Morris Hardware Company are displaying the cup at the foot of a Johnson display stand in their show window.

Buy This Motor On Our Easy Payment Plan



1924 PRICES

Our 1924 output will all be equipped as follows:—

N. J. M. Model 7	\$375.00
Covered Reverse Gear	25.00
Never Failing Rear Starter	25.00
Magneto Equipment	15.00

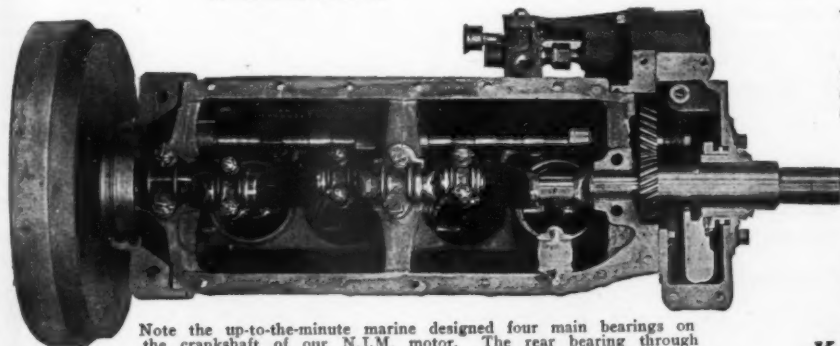
1924 Model, fully equipped\$440.00

WE have made it easy for every boat lover to have a good engine in his boat. By our Easy Payment Plan you can buy a brand new N. J. M. with a small down payment and pay the balance while you are using the engine.

Furthermore we have proved that the N. J. M. is so economical in fuel consumption that the saving in gas compared with most other marine engines of the same power will actually pay for the N. J. M. in part of one season. Perhaps your old engine would run another year, but why put up with all the bother and expense when you can save money by getting a new N. J. M. right away.

The price of the N. J. M. is \$440 *completely equipped*. Last year we listed the engine only at \$375 but we found that 90% of our customers required the complete engine equipment so the 1924 price includes Covered Reverse Gear, Never Failing Rear Hand Starter and Magneto as well as carburetor, water pump and everything else ready to run. Remember this when you compare the price with others.

The N. J. M. is chock full of advanced and unique features which you will instantly recognize as characteristics of a superior marine engine. For example, the oil is circulated by a positive self-priming pump and is passed through a water-cooled oil cooler. A specially designed hot air intake takes any gas fumes that might get by the pistons and uses them again through the carburetor. The water pump can be removed without disturbing the ignition timing. The hand starter has no parts engaged when the motor is running. Get our catalog and read about these and other remarkable features.



Note the up-to-the-minute marine designed four main bearings on the crankshaft of our N.J.M. motor. The rear bearing through which the full power is transmitted is 2 1/4 inches in length. The shaft is two inches in diameter. This is marine construction—not automobile design.

THE N. J. M. is a first class four-cylinder four-cycle engine of genuine marine type. We have made the essential parts interchangeable so that the N. J. M. owner can get new parts and expert repair service promptly and economically from any Ford Service Station.

When you study N. J. M. construction you will see many points of difference from automobile motor design—all typical marine practice. Extra large main bearings, positive lubrication, hot spot manifold, enclosed reverse gear and many other advanced features, several of which are exclusively N. J. M. designs.

Prompt Deliveries—but Don't Delay

Nothing is more exasperating than to order a new engine and then have the delivery delayed. We know many buyers and dealers who have had this trouble—but not with the N. J. M. We have a real factory which has been in production on this motor for several years. We keep it running full time winter and summer and try to keep a stock for immediate shipment. But for your own protection, we advise you to place your order as early as possible.

Write today for details of our Easy Payment Plan

We'll be glad to send you the details together with our catalog, and answer any special questions you ask.

Boat Builders and Engine Dealers

If you haven't tied up with the N. J. M. franchise—get our proposition NOW.

New Jersey Motors, Inc.,
Keyport, New Jersey, U.S.A.
Cable Address: "Nujermo" Keyport

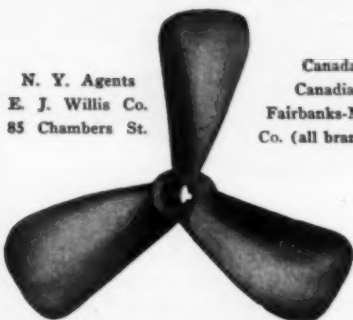
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Builders of "Boats That Will Last"

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ESTABLISHED 1893

Your Cruiser Should Have Light

(Continued from page 28)

together with the speed at which the generator should run it only remains to figure out the diameter of the generator pulley.

With D = flywheel diameter

d = the generator pulley diameter

R = engine revolutions per minute

r = generator revolutions per minute

$$d = \frac{DR}{r}$$

The generator pulley can be made of wood and fastened to the generator shaft with a pin passing through pulley and shaft, or it may be of metal. If the latter—care should be taken to make it as light as possible and to have it carefully balanced to prevent vibration at high speed.

A single ply leather belt well softened and of about 1½ inches in width is ample for the drive. This belt may be tightened to take care of the slack by means of the sliding base of the generator mount as shown.

When the motor flywheel is enclosed a pulley may be installed on the propeller shaft and generator belted from that. Do not try to drive by belt from the water pump or accessory shaft as they were not originally designed for this service and the extra load imposed on shaft and bearing may cause trouble.

After having installed and belted up the generator do not start the engine unless the generator is connected to the battery, failure to do this may result in either blowing out the fuse in the field circuit or possibly burning out the generator itself. If it is desired to operate the engine with battery disconnected, throw off the belt. It should be noted that the field fuse itself *should not be of greater capacity than 5 amperes*. The installation of a larger fuse may result in the ruin of your generator. In looking at the wiring diagram you will note that it is of the double wire system. That is, one wire carries the current from the generator to the battery and a second wire completes the electrical circuit between them. Also the current is carried from the battery through the switchboard to the lights and the circuit return to the battery is made by a second wire.

In most of the automobile installations the circuit is what is known as the grounded return type, that is the return circuit is made through the metal frame of the car in place of a wire. For this reason one side of the generator is usually grounded to its frame and if your generator is of this type all that will be required is to fasten your return wire from the battery under one of the generator bolt heads.

In wiring up the lighting circuit two things should be most carefully observed.

First, thoroughly clean and solder all joints in the wiring using a non-corrosive soldering flux and after the soldering is completed freeing the joint from the flux by washing it with a little denatured alcohol.

Second, thoroughly tape the joints when finished. It is also good practice to give this tape a coat of asphaltum varnish as a further protection.

The connections to the battery terminal should be tightly made and then the battery terminals themselves and the wires where they join on smeared with vaseline to prevent corrosion.

The battery should be located where it is readily accessible for inspection and yet where it is well protected from the salt water, for if the salt water gets into the battery—good-bye battery.

As the electrolyte in the battery contains a large percentage of acid you *must keep it from spilling*. Failure to do this will mean that part of the hull upon which this acid is spilt will be eaten and rotted. A wooden tray, about an inch larger in both dimensions than those of the bottom of the battery and about two inches in height lined with sheet lead is a simple and inexpensive insurance against having to replace part of the hull construction at no far away date.

The generator should not be neglected after installation. It will require a couple of drops of light oil in the bearings possibly every two weeks during the season. Do not, however, act on the principal that if two drops are good for it, eight or ten are better for flooding a generator will mean that you probably are going to get oil on the commutator and in a short while your generator output will drop due to commutator and brushes being gummed up by the oil.

There is no need to go into any details for the care of the battery as the battery manufacturer will furnish you a booklet giving most thorough and complete instructions on this point.

Below are given a few suggestions which are intended to help the boatman out of any possible troubles with his lighting system that may arise.

Failure of generator to show a charge on the ammeter should always be checked by inserting a second ammeter in the main

(Continued on page 100)

Gray Motors

Model

"Z"

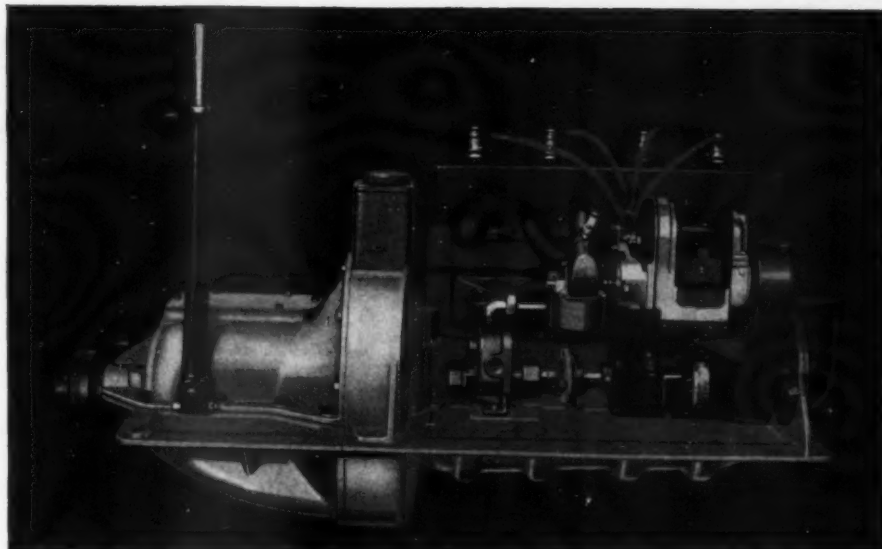
12-18 H.P.

Shortest

Lightest

"Complete"

Motor


\$395.

Complete
Motor with
Electric
Lighting and
Starting
Equipment,
Battery,
Instruments.

Built by practical Motor Boat Men who have been building and using Marine Motors for thirty years.

Designed and built by men who are among the greatest motor builders in the world; by men who have produced millions of dollars worth of the highest grade gasoline motors that it has been possible to build; by men whose experience and knowledge you can trust.

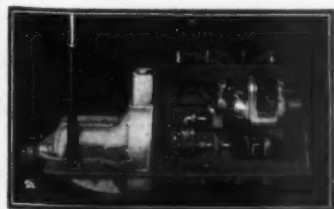
Gray motors are built in sizes from three to fifty horsepower, two cycle and four cycle, from \$130.00 up to \$1000.00

60,000 Gray users all over the world will tell how thoroughly good Gray Motors are.

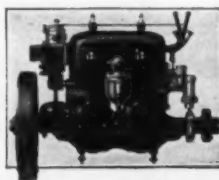
Write today for special literature on the size of engine you are most interested in. New list of bargains in used motors just out; all sizes, 2 cycle, 4 cycle.

Gray Marine Motor Co., 4910 Lafayette Avenue, East

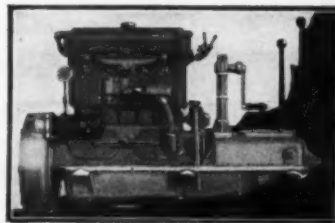
Detroit, Mich., U.S.A.



Model "Z", 12-18 H. P.



Model "U" 3-4 and 6-8 H. P. 2 cycle standard the world over for 17 years.



Model "V" 20-30 H. P.

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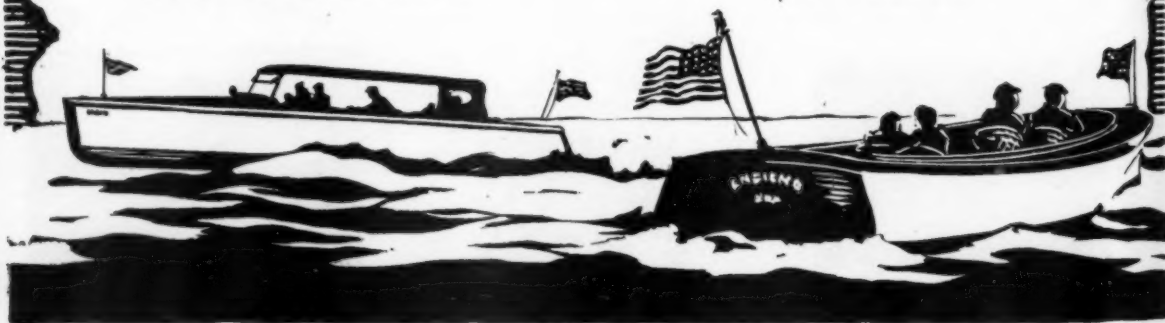
"All the Name Implies"

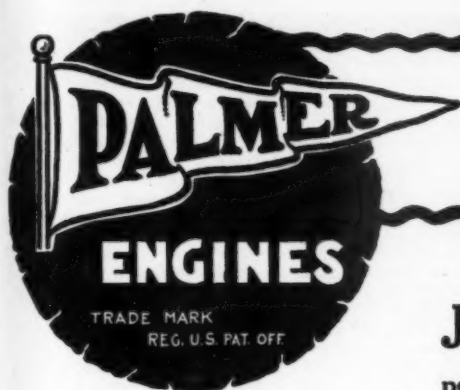
Send for 1924 folder describing the new
type Multi-Cone Clutch.

STANDARD GEAR COMPANY

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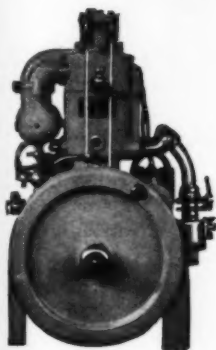
You'll Like This New Palmer YT-2

JUST a year ago we announced the new Palmer model YT, a 2 H.P. single cylinder four cycle engine weighing only 95 pounds and designed especially for yacht tenders and other small boats. This little engine quickly proved so popular that we had to meet the demand for a similar engine with two cylinders.

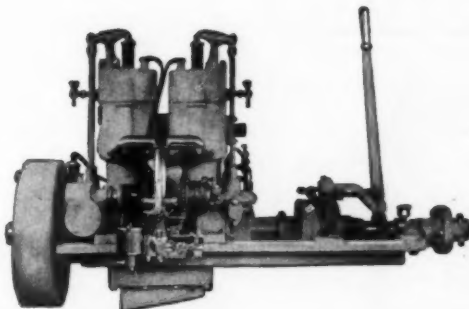
So here it is—the YT-2. It was publicly exhibited for the first time at the Annual Motor Boat Show, where it made a great hit with the hundreds of boat builders, engine dealers and boat owners who inspected it. The new YT-2 weighs only 200 pounds, or 260 pounds complete with reverse gear. It is a valve-in-head engine and develops four to five horsepower.

Price with reverse gear . . . \$240.00

Price without reverse gear . . . 200.00



In spite of its small size this is a high-grade engine and a typical Palmer from top to base. It has individual cylinders with detachable heads. The intake gases are heated by manifold being cast integral with cylinders. The oiling system is combination force feed and splash. A counter balanced crank shaft practically eliminates vibration. All bearings

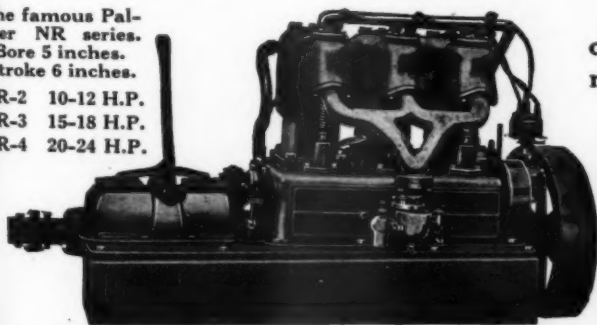


are bronze backed, die cast and interchangeable.

Ignition, high tension magneto equipped with impulse coupling, which insures easy starting. Exhaust manifold water-jacketed. For boats that do not have fore and aft space, this motor can be purchased without reverse clutch. Weight about 200 pounds without gear, 260 with reverse gear.

The famous Palmer NR series.
Bore 5 inches.
Stroke 6 inches.

NR-2 10-12 H.P.
NR-3 15-18 H.P.
NR-4 20-24 H.P.



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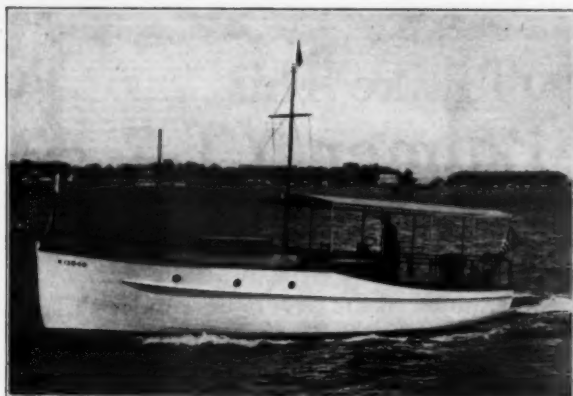
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Operates on 6 volt storage battery, using 30 candle-power nitrogen bulb. Projects the most powerful beam known for a light of its size. Indispensable for spotting buoys, landings, piers and anchorages as well as avoiding driftwood and rocks.

Swings in any direction or complete circle. Instantly detached for use as a work light. Also furnished with cabin control.

Prices.....\$6.00 to \$15.00

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154 Nassau Street

New York

Your Cruiser Should Have Light

(Continued from page 96)

charging line preferably where the battery wire is connected to the cutout. This is to make certain the fault lies in the generator and not in the ammeter. If this test shows that the generator is not charging the trouble may be due to a blown field fuse or poor contact of fuse in fuse clips. If fuse is blown replace with one of 5 amperes capacity. If not blown, clean metal ends of tube and inside of clips where they come in contact with the fuse ends. If generator still refuses to charge, remove the band around the commutator end of the generator and with generator running press in turn with the finger on each one of the generator brushes. If while the finger pressure is kept on the brush the ammeter shows that the generator is charging, the trouble is probably due to either a dirty commutator or brushes that are sticking in the holders. To clean the commutator take a small piece of No. 00 sand paper and with the generator running press the sand paper against the commutator with the finger. Repeat two or three times when commutator should show clean and bright.

If cleaning the commutator fails to produce a charge reading on the ammeter the brushes should be removed from their holders one at a time and scraped slightly on the sides to free them. Care should be taken to reinstall the brushes in the holders in exactly the same position they occupied before removal. This will insure correct re-seating of the brushes on the commutator.

A low charging rate is very often cured by cleaning the commutator or freeing up the brushes or possibly by both.

A high charging rate calls for immediate attention as the demands made today on the automotive generator call for a large output from a small machine. It follows that the factor of safety in taking care of overloads or charging rates which are higher than its rating is not very great.

The most common cause of a high charging rate is the incorrect setting of the generator third brush. This may have been moved after the original setting was made by the manufacturer and in any event should be corrected at once. Loosen up the clamping device that locks the third brush (the clamping device varies with manufacturers' designs), move the third brush till the ammeter reading shows the correct output for the generator and then tighten the locking device securely in place.

It sometimes happens that a generator is charging high and the trouble cannot be located in the generator itself. In this case, trouble can usually be traced to poor external connections in the wiring, particularly at the battery or the switches. Poor connections induce a high resistance in the charging line which in turn raise the output of the generator to a dangerous value.

Lamps in one circuit do not burn.

This may be caused by:

Burned out lamp. Try another lamp in the same socket. If the trouble cannot be located immediately, disconnect the damaged circuit until the trouble has been located. If the trouble is in a particular lamp socket, disconnect the attachment plug from this socket until the trouble can be removed, and see that the removed attachment plug does not make a short circuit.

An open circuit, broken, or loose connection in the wiring. Examine the places where the connections are made on that particular circuit.

None of the lamps will burn. This may be due to:

Terminals of the battery are disconnected or corroded so that they do not make a good contact.

Ground wire from the battery is disconnected or broken.

Wire from battery terminal to lighting switch disconnected or broken.

The lamps are burnt out.

Battery is run down.

Lamps go out for an instant only. If the lamps in one circuit act this way, there is probably a loose connection in the circuit so affected.

Lamps become dim when engine stops. This indicates a discharged battery. If possible have the battery charged at once from an outside source. If this cannot be done, endeavor to run with fewer lamps than normal, for a few days, or until the battery voltage picks up again. This might also be due to closed cutout contacts or a ground in the wiring system.

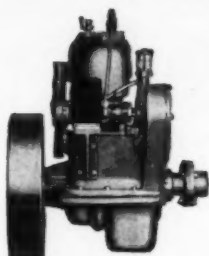
Generator from \$12.50 to \$25.00 depending on size and condition of machine.

Wood screws, and brass strap for cradle..	\$0.75
Ammeter	1.50 to 3.00
No. 14 rubber covered wire.....	.0134 to .02 per ft.
Wood moulding05 to .06 per ft.
Lamp socket for switchboard.....	.25 each
2 and 4 C. P. lamps.....	.25 each
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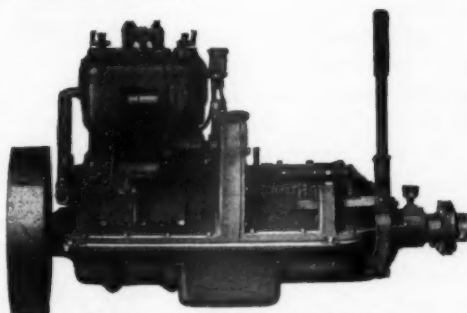
KERMATH

"A Kermath Always Runs"

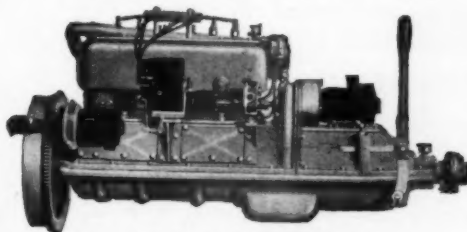
Well, it was a Grand Show!



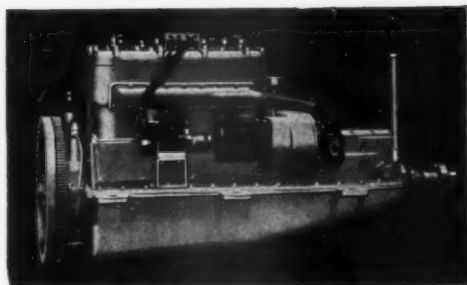
1 Cylinder, 3-4 H. P.



2 Cylinder, 6-8 H. P. and 4-5 H. P.



4 Cylinder, 20-25 H. P.



4 Cylinder, 35-50 H. P.

Summing it all up, the Motor Boat Show just held in New York City was a "Grand Show." Bigger and finer every year than the preceding shows, almost every manufacturer of marine motors was represented with an exhibit this year.

And of course the famous line of Kermath motors was there with a full representation. Every one of our models was on display in the Kermath booth.

All through show week our exhibit was crowded with throngs anxious to discover the secret of the famous motors of which we can truly say "No Kermath has ever worn out."

But quality such as is built into Kermath Motors is something that cannot be seen. It is in-built and discloses its worth only after long service in the hands of the user.

Business transacted was mighty fine, and all in all, we are tremendously elated over the results of the Motor Boat Show.

KERMATH MFG. CO.

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and **WC** trade mark on bell. Buy from your dealer. He can fit you out complete with **AUTOCHIME**, **WC** Whistle Valves and special fittings for attaching Whistle to smoke stack or deck.

Get This Book of Helpful Hints for Motor Boaters

"Sea Craft Suggestions and Supplies" solves those daily "puzzlers" that few know how to handle. Tells how to Box the Compass; what is Proper Ground Tackle; gives hints on Steering gear, etc.; describes **WC** Dependable Marine Hardware; tells uses. Compiled from 75 years' experience in making marine fittings. Sent prepaid for 50c.

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You can't buy a better engine at any price. You can't buy as good an engine at anywhere near the price. Study the Stearns design and you will know why.

The eight different sizes of Stearns Engines cover the power requirements of every size and type of pleasure craft, speed boat or work boat, ranging from 20 to 150 H.P.

Write today for catalog and tell us which model you are interested in

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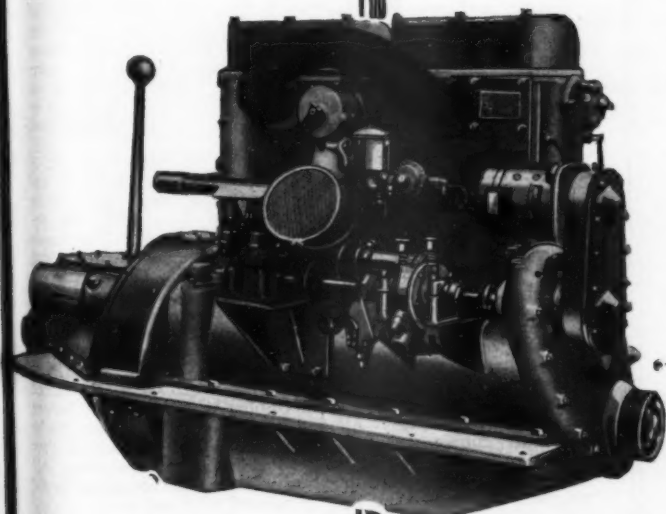
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Weight 900 lbs. Price \$1090



New Prices, Dec. 15th, 1923

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Model MDR $5\frac{1}{4} \times 6\frac{1}{4}"$
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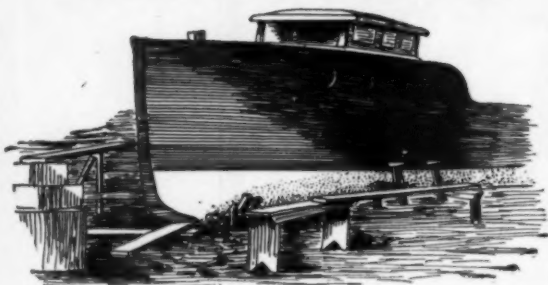
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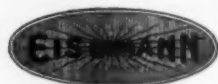


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Rosita, A 21-Foot Racer

(Continued from page 32)

larger in diameter than the size of shafting used, and so aligned as to suit the motor which is to be installed.

Stem & Knee: The stem is to be a natural growth hackmatack knee sided $1\frac{3}{4}$ inches, and shaped as per drawings. If not obtainable, a piece of white oak of the same thickness may be substituted and joined to a knee with 3 $\frac{5}{16}$ -inch fastenings. It is to be properly beveled and rabbeted and secured in a similar manner to the keel, after which the rabbeting can be completed. There should be four fastenings to the keel.

Transom & Frame: The transom shall be straight and made with a $\frac{5}{8}$ -inch thickness of mahogany in a single width. There should be a $\frac{3}{4}$ -inch oak cleat on the top and bottom, and an oak stern post $1\frac{1}{4}$ by $3\frac{3}{4}$ inches. It is to be screw fastened to the cleats, etc., and the holes wood plugged. It should be supported on the keel with a 1-inch hackmatack knee on each side screw fastened into the post and keel.

Frames: There will be a sawn frame at each station of $\frac{3}{4}$ -inch hackmatack. If it is not possible to secure this, it may be made of side and bottom members of white ash, oak, or elm, halved into each other at the chine. These frames are to be approximately $2\frac{3}{4}$ inches deep on the bottoms and $2\frac{3}{4}$ inches reducing to 2 inches at the top of the side members. They are to be fastened with No. 8 copper rivets, four on each side, leaving a central space clear to fasten the chine to. An alternative method will be to fasten with 3/16-inch galvanized bolts without halving. They are to be joined with a 1-inch oak floor tie, which is to be increased to $1\frac{3}{4}$ inches at stations 5, 6, 7, and 8. These are to be either rivet or bolt fastened with at least four fastenings on each side. The floors are to be through bolted to the keel with $\frac{3}{8}$ -inch bolts as far as Station 5. From this point aft two 5/16-inch fastenings are used which go through the rabbet. The bottom member of the frame can be one continuous piece, beginning at Station No. 9 and further aft. If this method is followed 1-inch stock can be used, reduced to $\frac{3}{4}$ inches outside the stringer. After the planking is finished, a 7/16 by 1-inch steam bent frame is placed between each sawn frame. This is to extend from clamp to clamp, and be filled in between the planking stringers, with a suitable filler at the chine.

Chines: These are to be shaped from $1\frac{3}{4}$ by $1\frac{3}{4}$ -inch white oak or rock elm in a single length. They are to be properly beveled and rabbeted to suit the planking, and will be reinforced at the stem and stern with a breast hook and knee on each side. They are to be fastened to the frames with $\frac{3}{4}$ -inch copper rod riveted over a burr and slightly tapered toward the stem.

Engine Stringers & Bed: Stringers are to be shaped from a single length of $1\frac{1}{4}$ -inch aero spruce and notched over the frames, through bolted with 5/16-inch bolts. They are to be spaced to suit the motor to be installed, those shown on the drawing spaced for the Scripps engine. Engine bed is to be of $1\frac{3}{4}$ -inch white ash or elm and through bolted to the stringers every 9 inches and drift bolted to the floor with 5/16-inch bolts and rod.

Clamp & Planking Stringers: The sheer clamp to be of $1\frac{1}{2}$ by $2\frac{1}{2}$ -inch yellow pine, elm, or fir. It is to be let into the frame and securely screw fastened. There will be a breast hook at the stern, and a knee on each side at the stern. Stringers are to be a single length of $\frac{3}{4}$ by $1\frac{1}{2}$ -inch elm or fir on the sides, and 7/16 by $1\frac{3}{4}$ inches on the bottom. They are to be spaced approximately as per plan, and let into the frames and screw fastened.

Deck Beams & Framing: All beams on stations to be of 1 $\frac{1}{8}$ by $1\frac{3}{4}$ -inch white oak or elm, except on Stations 5, 8, and 11, where they shall be $\frac{3}{4}$ by $2\frac{1}{4}$. Intermediate beams to be $\frac{5}{8}$ by $1\frac{3}{4}$. They are to be sawn to a proper radius, and securely screw fastened to the frame and camp. The hatch trimmer is to be $\frac{3}{4}$ by 2 inches, while the trimmer in the cockpit will be $\frac{3}{4}$ by $2\frac{1}{4}$ inches, all screw fastened. The partner to be $\frac{3}{4}$ by $1\frac{1}{2}$ inches, let into the beam and screw fastened. The center is to form the line for the covering board. There will be supporting knees on station frames which shall be bound with a $\frac{3}{4}$ by $\frac{3}{4}$ -inch oak bent frame, screw fastened except on the bulkhead.

Frame In General: The entire frame is to be neatly faired and trimmed and all joints well painted with lead paint before making the fastenings. All fastenings in the frame are to be of bronze, copper, and galvanized iron. Where galvanized they are to be well dipped in red lead paint before applying. All outboard galvanized fastenings are to be counterbored and wood plugged, the heads being heavily painted with red lead.

Planking: The planking is to be of white cedar or white pine if the hull is to be painted, and mahogany if it is to be finished natural. It shall be $\frac{3}{4}$ inch thick on the sides and 7/16 inch on the bottom. It is to be in as long lengths as possible, and of clear selected stock. The planks are to be

(Continued on page 108)

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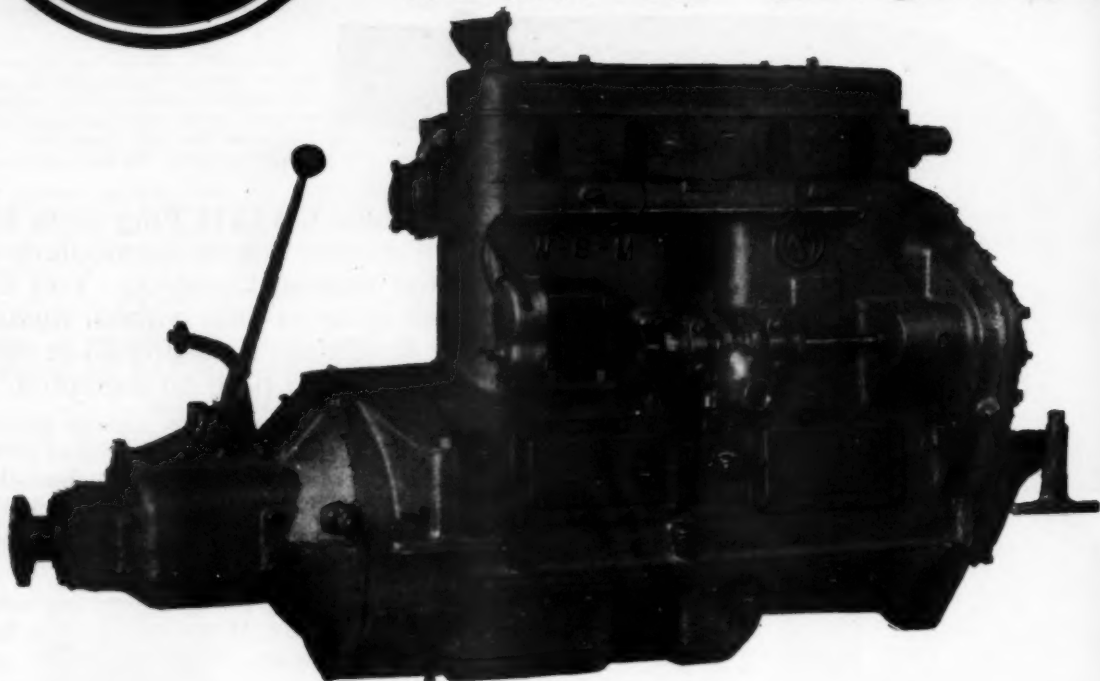
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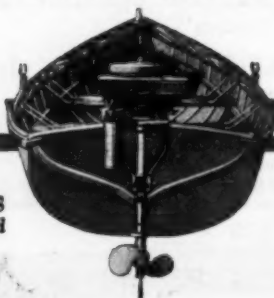
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Rosita, A 21-Foot Racer

(Continued from page 104)

spiled so that the seams will meet on the center of the stringers and fastened to the sawn frames with 1 3/4-inch No. 9 screws, and copper riveted to the stringers. They are to be copper riveted through the bent frames and fillers with 2-inch copper wire nails, of such length as may be necessary through the curved portion to the chine. All joints are to be made on quartered oak butt blocks with at least six fastenings on each side. Planking is to be screw fastened into the keel, chines, stem, and stern, with 1-inch No. 8 screws. All holes are to be counterbored with a 3/8-inch Forstner plug bitt and plugged, using mahogany plugs if softer wood is used and painted. Seams on the sides are to be made flush and blind caulked by making a groove in the center of each plank, and inserting a strand of soft Seise twine in between. The chine seam on the side and all seams on the bottom are to be lightly caulked with spun cotton which is rolled in an not pounded. An allowance for seams should be about 3/32 inch. Planking is to be thoroughly dressed and sanded, and a coat of hot oil should be applied throughout. This consists of a mixture of equal parts, boiled linseed oil and turpentine, applied boiling hot. The seams can be filled with a composition made of dry lead and spar varnish mixed to the consistency of putty, which should be sanded before it becomes perfectly hard, or after about 48 hours. A coat of pure lead paint shall then be applied inside and outside, except those parts which are to be finished bright. If flush fastenings are used, the thickness of planking may be reduced 1/16-inch on both sides and bottom.

Bulkheads: There will be a watertight bulkhead at Station No. 4 made up of a single thickness of 3/8-inch Haskelite or of two thicknesses of 1/4-inch white pine laid diagonally in opposite directions, with a layer of light canvas drill laid in marine glue between them. They are to be close riveted or copper tacked every 3 inches. There should be a strip of cotton flannelette on the frames, laid in marine glue, before applying. A similar strip of cotton shall be applied to the frame before the planking. An opening approximately 16 by 20 inches backed with 3/4 by 2-inch cleats shall be cut, and a door made so that it will screw fasten to place over a gasket to make it tight.

Decking: Covering boards and center plank to be of 5/16-inch mahogany, screw fastened to clamp, partner, and beams. Balance of the decking to be 5/16-inch white pine laid in approximate widths of 6 inches, to be fastened to the beams and to 3/4 by 1 3/8-inch battens which are let into the beams and screw fastened. All decking is to be fastened with No. 7 brass screws into beams and partner, and copper nailed to the battens. Seams to be flush and all to be thoroughly cleaned and sanded. An alternative covering for the deck can be of canvas, in which case apply the covering board temporarily and plank with 5/16-inch white pine, fastened with 1 1/2-inch galvanized nails and screws into the battens. Dress thoroughly and remove the covering boards, and lay light weight canvas duck in one piece on marine glue or heavy paint. If paint, cover the whole surface first and when dry lay canvas on heavy paint. Stretch well and when completed apply another coat of paint. When dry fasten covering boards permanently. Clean up well and apply a filler and a coat of Valspar. After a second coat of varnish smooth the canvas surface thoroughly and apply either two coats of deck enamel or three coats of Japan color, and varnish together with the woodwork. The center plank should be of oak or mahogany.

Hatch Cover: The frame can be of 3/4 by 1 1/2-inch material, beams of 3/8 by 1 3/8 inch. Secure a wind strip of 3/8 by 1 1/2 inch, which is to be let into the beams and covered the same as the decking. Optional, it may be mahogany with flush brass screw fastenings. Allow 1/2-inch all around for clearance. Screw fasten a 1/2 by 1/2-inch oak hatch rest on each end to support hatch cover.

Cockpit & Finish: The bulkhead to be of 9/16-inch material in alignment with the bottom of the coaming. Coaming to be 9/16 inches and the back to be 3/4 inches. Bulkhead to be made up with 9/16 inches to the foot rest, in three panels to be divided with a 5/16-inch nosing. To be backed with a 3/4 by 2-inch stay extending to the stringers. There will be a 3/4-inch cowl support with a 3/16-inch nosing. Cleats for support and a 3/8-inch cowl screw fastened to same. Cockpit flooring is to be of white pine in three sections and fitted with a foot rest. The sides are to be screw fastened and the center to be made to suit the housing over the motor. The flooring is to be solid under the seats with a removable section between the seats, as well as forward of the seats. The forward seat is to have a 1/2-inch front and back, backed with 3/8-inch cleats, and also cleats on the top for division. The top is to be of 9/16 inches

(Continued on page 112)

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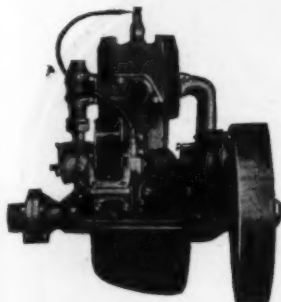


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What is the L-A Golden Rule Selling Policy?

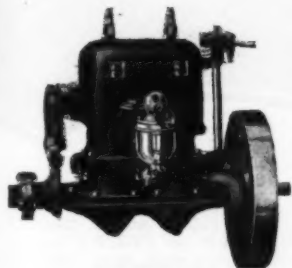
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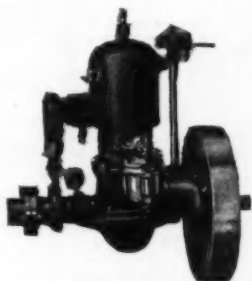
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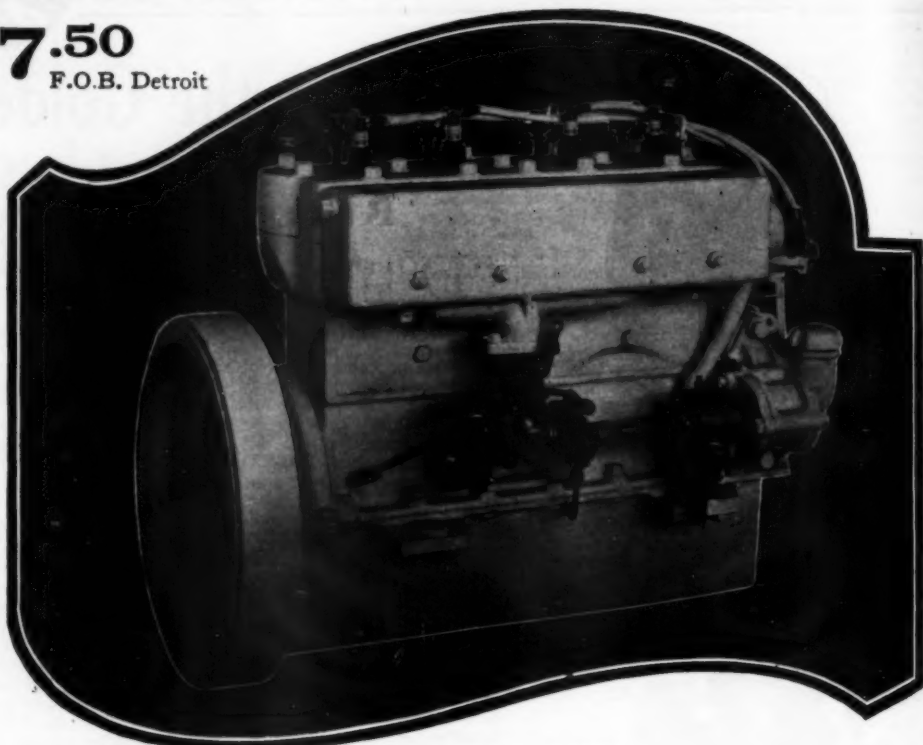
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Center line of crankshaft to top of cylinder head, 14 1/4 inches
Engine bed timbers should be spaced 9 1/2 inches

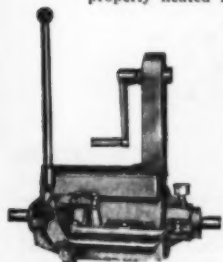
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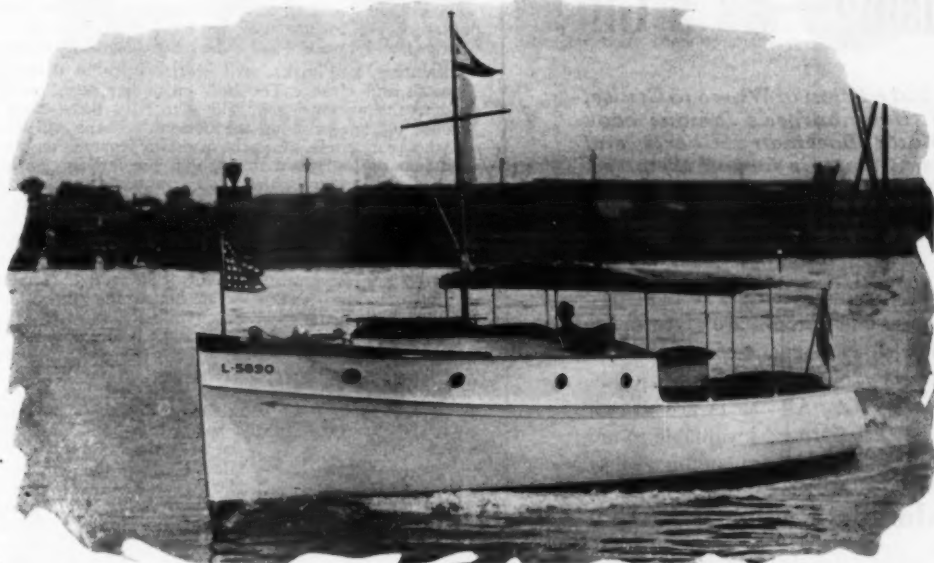
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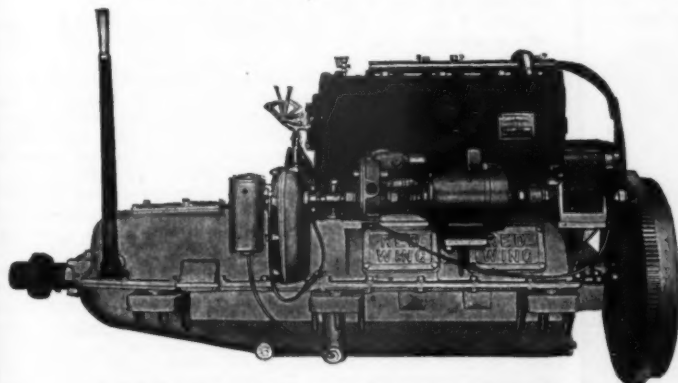


"Cecile," 30 x 8 ft. cruiser, built by the Auto-Marine Engine Co., Wilmington, Del., for J. J. Morris, Philadelphia, Pa. Makes 12 miles per hour with a model B 32-40 H. P. Red Wing "THOROBRED."

NO sensational advertising or exaggerated claims have ever been made concerning the Red Wing "THOROBRED" line of marine motors.

It's sheer merit that is responsible for the ever growing popularity of these

reliable engines. Their ability to keep on giving satisfaction under the severest of marine use, is almost uncanny. But they do it, and new Boosters are daily added to the list of "THOROBRED" owners, who swear by their engines through all kinds of weather.



Models F 28-36 H. P. and B 32-40 H. P. "THOROBREDS" with pressure oiling system.

Seven "THOROBRED" sizes
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Two types:
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Adapted to cruisers, work-boats,
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iary power plants in the sailboat.

Write for interesting
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Address

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(Foreign postage other than Canada, \$1.00 extra per year)

Rosita, A 21-Foot Racer

(Continued from page 108)

with an opening for access to the lockers below. The back to be $\frac{3}{4}$ inches either permanent or removable. The after seat to be of the open removable type and set on a riser. There will be a panel immediately after this, either screw fastened or buttoned into place to allow for quick access under the stern. All finish to be of mahogany, except the flooring which shall be of white pine. Seat tops may also be white pine if desired. Sides of the cockpit may be lined with $\frac{5}{16}$ by 3-inch strips latticed and fastened to frames with brass escutcheons.

Painting & Finish: All work is to be thoroughly sanded smooth and clean. The hull finish has been previously specified to the priming coat, and is to have three coats of Valspar bronze bottom paint on the bottom. There will be three coats of the best grade of yacht paint or enamel on the sides, and one coat of lead paint throughout the interior, with three coats of a desired color in the motor compartment. All decking and natural finish in the cockpit to be thoroughly dressed, sanded and cleaned, and filled with the best paste filler followed by three coats of Valspar. All varnish coats are to be well sanded and prepared before applying the second coat. Flooring, seat tops, etc., to have two coats of lead paint. The bottom to be painted with red lead paint as far as the water line, and then finished with Valspar bronze, while the sides if painted, should be first covered with a coat of light lead colored priming paint.

Fastenings: All fastenings where exposed are to be of bronze or copper if the boat is to be used in salt water. For fresh water galvanized fastenings are to be used, but should be covered with heavy red lead paint before closing in. Brass screws should be used below the water line, and galvanized screws above. All screws are to be of at least three times the length of the thickness of the material which they secure.

Fender & Guard: Fender is to be a $1\frac{1}{4}$ -inch half round moulding, screw fastened every 6 inches, holes wood plugged. Or it may be of the V shaped type with a $\frac{3}{4}$ -inch face. It should be fastened in a similar manner with a $\frac{3}{4}$ -inch half oval brass protecting strip, screw fastened with oval head screws. There should be a guard of the shaped type $\frac{7}{8}$ by $\frac{1}{4}$ inches, extending from the stern to a point where the top fender intersects. It is to be screw fastened and protected with a $\frac{1}{2}$ -inch half oval brass, screw fastened in a similar manner.

HARDWARE & FITTINGS:

Steerer: To be of the W. S. Hall & Company type, with a scored drum and a 16-inch wheel, mounted on the port side with a $\frac{3}{4}$ -inch bronze cable leading to the tiller through 3-inch sheaves and the necessary fair leads.

Rudder: To be of the Hacker type suitable for this job, and is to consist of a bronze rudder with a special stuffing box, special hanger bracket, and sliding type tiller.

Strut: To be of manganese bronze of special Hacker type, suitable for this design. It is to be securely bolted through the keel with six $\frac{3}{4}$ -inch bronze bolts.

Shaft Log: To be of either the Hacker or Erico types, which are self aligning. It is to be securely screw fastened to the keel with $1\frac{1}{2}$ -inch No. 16 brass screws.

Gas Tank: This is to be made of 18 gauge galvanized steel and of approximately 25 gallons capacity. It should be fitted with splash partitions and riveted closely and well soldered. A $1\frac{1}{4}$ -inch filler plate should be fitted at the top, with a $\frac{3}{4}$ -inch opening at the bottom. It is to be located under the stern deck and securely cleated into place. The gas supply to the engine to be obtained through a vacuum feed having a shut-off valve at the tank. Filler opening to come through the deck and be connected with $1\frac{1}{4}$ -inch pipe and a screw type deck fitting.

Deck Fittings: There will be $\frac{3}{4}$ -inch half round brass to protect the stem, or a special form of shaped cutwater. The bow chock will be special. The bitt, $2\frac{1}{2}$ by $2\frac{1}{2}$ inches of the regulation type. A Hacker type clam ventilator. One 6-inch cleat on each side. One 7-inch cleat on the stern deck. One $4\frac{1}{2}$ -inch chock on each side aft. Flag socket forward and aft of the regulation type. Hatches to be mounted on $1\frac{1}{4}$ -inch brass piano hinges and bound with $1\frac{1}{4}$ -inch 18 gauge brass. This is to be screw fastened every $2\frac{1}{2}$ inches with No. 7 oval head brass screws.

Hatches: To be fitted with brass lifting handles and suitable lifting quadrants.

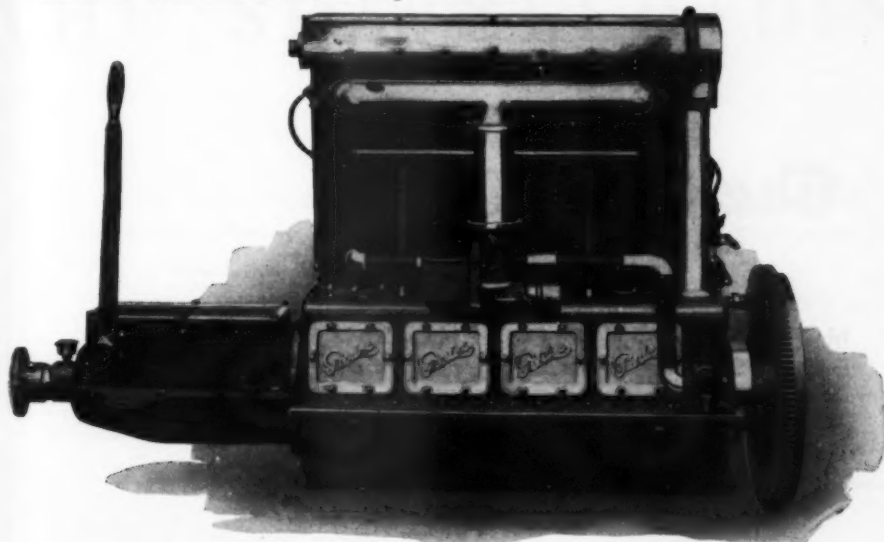
Motor Installation: The motor specified for this job is the model F-4 Scripps marine engine although any other motor of similar dimensions may be used. The engine is to be properly aligned and fitted with a $1\frac{1}{4}$ -inch shaft and bolted to the foundation. The exhaust to be carried off through copper tubing or galvanized pipe. All bends to be on a 45 degree angle. A portion of the over flow water should discharge into the exhaust pipe to cool it. All water piping is to be of brass for salt water. Galvanized pipe will do in fresh water. There

(Continued on page 124)

PEERLESS

MEDIUM DUTY

For many years Peerless Medium Duty Marine Engines have been foremost of their type in quality and value, offering good dependable power for runabout, cruiser or work boat at the lowest possible cost.



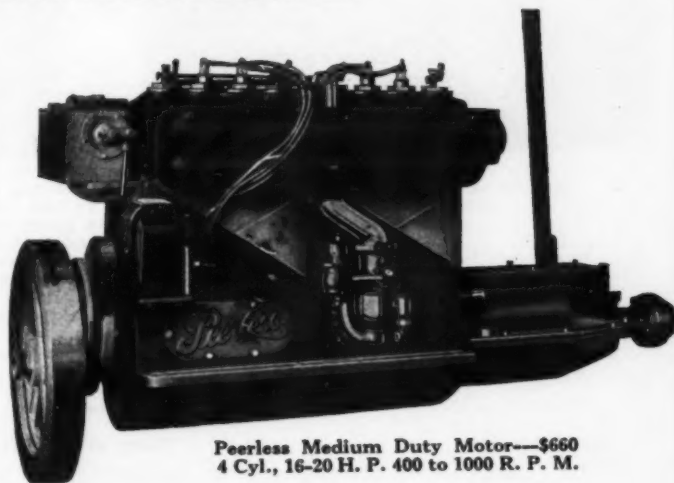
Peerless High Speed Motor, \$2,000. 4 Cyl. 125 H. P. 1700 R. P. M. Weight 800 lbs.

HIGH SPEED

Peerless High Speed Motors have now seen four years of active service and have become so popular that we have had to establish an entirely separate factory for high speed production.

We are putting the very best quality of design, materials and workmanship into the high speed motors and still they are cheapest per horsepower of any marine motor on the market. Standardized production in a new factory with modern equipment and low overhead make our low prices possible.

4 Cyl. 125 H. P. \$2000
6 Cyl. 200 H. P. \$3000



Peerless Medium Duty Motor—\$660
4 Cyl., 16-20 H. P. 400 to 1000 R. P. M.

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The steady demand and production for the famous Peerless Medium Speed Engines will not be interfered with to the slightest degree because they are still built in the same factory. If you have a medium speed boat of any size or type up to 75 ft., you can't find as good an engine for anywhere near the price.

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This letter from Mr. Sutphen of the Elco Works is typical of the expressions Motor Boating is receiving from both readers and advertisers.

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ADDRESS ALL COMMUNICATIONS TO THE COMPANY

New York Office,
5 Nassau Street,
December 24, '23.

Mr. C. F. Chapman, Editor,
Motor Boating,
119 West 40th Street,
New York City.

Dear Mr. Chapman:

I have been very much pleased indeed with the appearance and the reading matter contained in Motor Boating during the past year and consider it one of the most encouraging signs for the success of the industry in the future. You have handled the matter exceptionally well and given to the public what I believe they are interested in, and that is, short stories of the sea, interesting descriptions of new boats and developments in the industry, which has brought your paper out of the class of trade publications to a monthly magazine with reading matter that interests not only the owner of a motor boat but the prospective purchaser. We appreciate the effort you are making and want to support it whenever we can within our limitations, with which I think you are fully acquainted.

With best wishes of the season,

Yours very truly,

H. R. Sutphen
Vice President.



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SIZES 8' 6"—11'—13'

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The hull advantages of large high-powered Sea Sleds in a small boat — unequaled for rowing, outboard motors or yacht tender use. Exceptionally convincing selling points and a product which lives up to them.

Every boat distributor will find this dinghy a profitable addition to his line.



Remarkable Stability is shown with 180 pound man standing at extreme bow.



Landing on the Beach from the Bow with Ease, Safety and Comfort.

The Sea Sled Dinghy makes an ideal yacht tender or outboard motor boat, giving the greatest stability, safety and passenger capacity for its size, together with easy driving, easy rowing and easy towing at high speed. The unique features of this remarkable Sea Sled are fully illustrated in our Dinghy Bulletin. Write for it.

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**Inverted V-Bottom
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Boats**

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**Hickman Patents
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The Boat & Engine Market Abroad

(Continued from Page 24)

propelled boats and steam tugs do the towing. Pleasure boating is afforded by canoe-like craft called caiques, while a line of many ferry-boats supplies much of the transportation need for pleasure and business about nearby waters. A current sometimes as much as eight miles per hour is found in the Bosphorus. Finally, the foreign population, which might be interested in motorboating, is a transient one, and therefore little likely to be disposed toward buying.

These transformed engines may be obtained for about half the cost of new marine engines, which may cost between 1,500 and 2,000 Turkish liras. Though the old engines need constant repairs, local owners must use them because they cannot afford to purchase new ones. However, the influx of German motors, both land and marine types, has spread the training and use of motors, and the mechanical aptitude of the people has been increased, so that shop and repair facilities are more easily found than formerly.

Beginning in 1920 a number of new marine engines were imported from Germany, Sweden, Italy and England, and occasionally one or two American engines have reached this market indirectly; but so far only Swedish and German engines have become popular. These are practically all of the semi-Diesel type, the most popular makes being the Swedish Bolinders and Skandia and the German Otto Deutz, Eilenburger and Reform.

Interest has been shown in the semi-Diesel type, or engines constructed according to the Gluhkopf type. The latter is the American semi-Diesel taken over and adapted and specialized upon by the Swedish motor industry. This preference is due a great deal to the lower cost of fuel, especially crude petroleum and kerosene. It is anticipated that the heavyweight and semi-Diesel types will have much success in the future. It therefore seems essential, it was reported, that American engines to be offered on this market be of this type. Propellers should be provided with direct reversing gear.

The question of economic combustion is of importance; simplicity in handling, functioning and resistance are of primary importance; but, above all, price is decisive. The last two points account for the success of the Swedish and German engines here.

Due to lack of customs figures, no estimates are obtainable on the number of engines used or imported, but since the Armistice, dealers estimated, only about 80 marine motors had been imported. The number of engines operating about Constantinople and the Black Sea was placed at between 600 and 700, of which about 150 are of the semi-Diesel type of from 30 to 100 horsepower. The leading specialist in marine motors reported the sale of only 50 engines since 1920, these being mostly of Swedish and German make, ranging from 8 to 150 horsepower.

As regards the introduction of American engines to this market, local agents expressed conflicting opinions. Most were pessimistic and alleged that the construction and material of American engines are not suited to the market and that their price is too high. Others were optimistic in this respect, but stated that in order to compete with the German and Swedish engines the American types must present the same advantages of solidity of material and simplicity of functioning.

The methods of advertising and distributing engines in this market are perhaps as essential as technical considerations. The capital necessary for carrying sufficient stocks of engines of various sizes is not available. The two Swedish firms are represented by commission agents to whom are shipped certain numbers of stock engines on consignment. The best method for introducing American motors would seem through appointment of an agent who would have to exhibit several engines which would have to be sent him on consignment. It would be difficult, if

not impossible, to sell any great number of engines to local dealers on a cash basis at present. The political, economic and financial crisis and the exchange fluctuations are impediments preventing local dealers from tying up their capital.

MOTORBOATS.—Considering the high cost of foreign engines and motorboats, and all sorts of duties that increase their cost, as well as the low purchasing power in Turkey, the immediate prospect for the introduction of foreign-built motorboats is reported as poor.

There are only three or four relatively small shipbuilding plants in Constantinople, but they have been more successful at building small pleasure boats than heavier craft. The potential demand for motorboats is negligible, Mr. Hall says, and the present market is about nil.

OUTBOARD MOTORS.—This type bids fair to enjoy a good market when conditions settle, for, it was said, American makes are preferred. There have been about 60 of these small engines sold since the Armistice, mostly American, with a few Swedish and German. While sales have necessarily decreased since 1920, the demand is due to increase, and a large share will be reserved for American engines.

The market for accessories and equipment was reported poor at present.

Smyrna, which is the foremost export, has very few small motor craft; the harbor is little protected, and high waves come with even moderate winds.

AUSTRIA

A casual glance at the map of Austria would indicate a large field for motorboating. However, reported Wm. F. Upson, trade commissioner at Vienna, the Lake of Constance is dominated by Switzerland, where the manufacture of boats is highly developed; the Neus Sea is a lake only on paper, consisting mainly of reedy marshes; the shores of mountain lakes are sparsely settled; the upper reaches of the Danube are controlled by Germany; the Austrian stream is rapid and unattractive for pleasure boating and hazardous for business use. Finally, the war has impoverished the people and raised barriers to trade, diminishing the possible market here.

An interesting report is submitted on the work of engineers of one company which is directing its attention to the development of the oil-hydraulic Lentz gear, an invention of a native of Berlin, which, it is supposed, will lead to new developments in the field of power transmission and greatly widen the field for the Diesel motor.

The gear, which unites the possibility of changing speed and reversing, will make it possible to use Diesel motors for ships and locomotives without any complicated arrangements, thus making the eminent advantages of this motor over the steam engine available in the latter's field also. Experiments thus far seem to justify the hope that the introduction of this innovation will meet an urgent need, and that the steam engine will have to yield, even in the field where it has heretofore reigned supreme, it was reported.

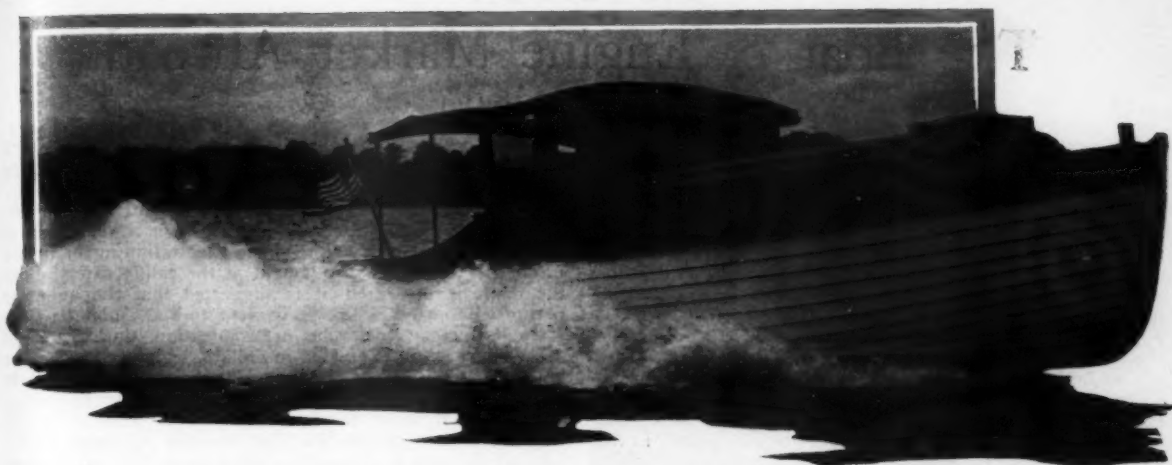
The market for engines, motorboats, equipment and accessories is reported as nil, and the people being powerless to buy.

GREECE

The Greek market is limited by the depreciation of the drachma, but marine engines and motorboats have never been introduced on a large scale in that country. Under present conditions, dealers were reported as saying, the marine trade is considered a dead issue. Dealers asserted no engines or motorboats are being imported because of financial and economic conditions.

During and immediately after the war this trade was controlled by Sweden, and most engines in use were of such manufacture, reported Charles E. Dickerson, of the Athens trade commissioner's office. But in 1919 and 1920 the foothold gained by Sweden was wrested away by

(Continued on page 118)



Col. Elverson's New Fishing Boat at 38.8 Miles per Hour

Powered with twin-screw Detroit Marine-Aero Engines (Fiat type)

"Golden Days Too" is the latest type of Florida fishing boat, a craft of unusual speed, seaworthiness and dependability. Just built for Col. James Elverson, Jr., of Philadelphia by Hubert S. Johnson, Bay Head, N. J., from designs by E. Lockwood Haggas, Atlantic City.

This boat is another demonstration of the perfect suitability of the Fiat type 300 H.P. engine, the power plant which is being installed in so many fine and fast boats this season. "Golden Days Too" is 35' x 10' x 26" and is driven at a speed of 38.8 miles per hour by the Fiats, turning a pair of 20" x 30" type I Columbian propellers at 1750 R. P. M.

These Detroit Fiats are now used by practically all the prominent boat builders. They afford a power plant of the finest design, materials and workmanship, light in weight and economical in fuel, at a cost of less than \$10.00 per H. P.

High Speed Type
300 H.P. at 1650 R.P.M.

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235 H.P. at 1450 R.P.M.

Write today for full details and prices.

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Eastern Distributors and Service: Sexton Motor Company, 149 Washington St., New York.

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The clean and orderly engine room of "Golden Days Too" showing the twin screw installation of 300 H. P. Fiats.

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The Boat & Engine Market Abroad

(Continued from Page 116)

Germany and American makers because Swedish prices were out of local reach. Freight rates from Sweden were too high, also. At present, competition is dull and German concerns, which gave the greatest competition to American firms, are no longer able to supply the market at prices materially lower than others.

Most engines in Greece use crude oil fuel. A few, of small power, use benzine or kerosene. Marine engines are used in ferry-boats and as auxiliary to sail, and there is a possibility of greater use of engines on ferries among the many islands.

Few outboard motors are used in that land, possibly not a dozen, and the market for motorboats is still non-existent because interest in them is said to be negligible. With some of the most beautiful and historic islands in the world at hand in the Mediterranean and Aegean, it would seem that the Greeks, also, need a little education in the joys of cruising.

ITALY

There is some market for small engines in Italy, also for outboard motors, and American makes are favorably known among the Italians, reported A. A. Osborne, trade commissioner at Rome. The main hindrance to trade extension at present is the unfavorable exchange rate. The limited character of the Italian market and the very keen competition are features. The Fiat 4-cylinder 25-h. p. engine, used commonly in runabouts, is considered the standard type in use.

The market could be considerably enlarged, possibly through some degree of association among the sellers. Large bodies of water exist in the form of sheltered harbors and lakes, the use of which is permitted by the climate through many months of the year. Also, a number of the Italian well-to-do either live near these waters or habitually visit them in the course of the year, and might be sold through suitable publicity and selling effort.

However, Italian designers and manufacturers have been prominent for more than twenty years in the development of the internal-combustion motor and its application. It might be difficult to wrest the Fiat from its place of prestige. Only with decided advantage in price over that of the former could an American motor of like power and size take its place.

The 25-h. p. Fiat sells for 14,000 lire, as compared with 18,000, the price which must be asked for the American motor of the standard four-cylinder type under present exchange. A lighter four-cylinder Fiat, developing 10-12 horsepower, sells for 11,000 lire, but not so widely, since the heavier type sells for comparatively little more.

Approximately the minimum price at which the Italian agent could sell an American motor, with the usual agent's 25 per cent discount from list price, and cover all expenses, is in lire about 23 to 25 times the list price in dollars. Or, multiplying the agents' price in dollars f. o. b. factory—that is, list price less discount—by 31, gives the minimum number of lire at which the agent must retail in order to recoup himself for purchase, transportation, duties and other expenses, at the ruling exchange rate of from 22.50 to 23 lire for the dollar.

The minimum price at which an American motor listed at \$120 f. o. b. can be sold is about 2,800 lire.

The system of shipping consignments on cash-against-documents basis is the chief source of business friction. American manufacturers, it was reported, insist their Italian agents have adequate financial resources to take shipments of engines at more or less frequent intervals on that basis. The Italians declare they cannot do so in their restricted and highly competitive field, and hardly any Italian agent has financial resources to act satisfactorily on the American terms.

The agent must gamble on the course exchange will take between the time he places his order and the time when the shipment arrives and he is called upon to pay the

draft in dollars. In many cases, too, he will wait until he actually has a couple of orders in hand before ordering a shipment.

One uncertainty the American manufacturer could remove in this connection would be through co-operation of his bank. Instead of calling upon the Italian agent to pay in dollars which must be bought at the ruling rate the day the draft is presented, it is suggested that the agent be permitted to pay in lire equivalent to the amount of the f. o. b. factory cost, plus transportation, duties and all other charges, all expressed in dollars, right to the customs house at his Italian port. Since the manufacturer wants dollars he could reassure himself on that point by having his bank sell short for his account the amount in lire which is equivalent at the time he calls his bank to the total of the sum in dollars his agent owes him, on the date the shipment is made. Thus, if the shipment and freight to Genoa amounted to \$975, or lire 22,425, at the rate of 23 to the dollar, the manufacturer's bank could be asked to sell that number of lire and credit his account. The manufacturer would then owe the bank lire 22,425, a debit which he could cancel when he received from the agent a draft for that many lire. By this method both agent and engine-builder would be protected against the exchange fluctuation.

The engine business would no doubt be stimulated by this method, it was added.

MOTORBOATS.—Motorboat users are only those of means; very infrequently are they persons of moderate circumstances. Cruising is not popular with them and the liking for aquatic recreation is not widespread. Few Italians, moreover, enjoy tinkering with an engine as does the American, and owners usually keep paid hands. There is said to be little opportunity to sell motorboats in this country, as there are plenty of local builders, and while their output might seem crude and unfinished to the American buyer, they satisfy the local demand.

Runabouts about twenty-five feet long, equipped with the Fiat engine mentioned, and making up to eighteen miles are especially used, but the Italian thinks of them for water transportation only as his automobile—only something to get him somewhere. The Italian boatbuilder charges from lire 9,000 to 25,000 for such a hull, and the average cost is perhaps lire 15,000 to 16,000, so that, with the motor, the total cost is around lire 30,000.

Perhaps the besetting problem in selling American motorboats on this market would be maintaining stocks; generally, it is agreed, selling boats from a catalog would be quite impracticable. The Italians must have samples before their eyes. And so, it was said, the chief opportunity lies in selling engines for Italian-built hulls.

OUTBOARD MOTORS.—Motors of American make are preferred by Italians, but a typical American engine of about three and one-half h.p. has to be offered at about lire 2,800, due to the exchange, while a locally built motor of about the same class can be sold for lire 2,500 and apparently gives satisfaction to local users. That interest could be increased in the outboard, or other light engine, would be indicated in the popularity of the motorcycle, of which, it was added, some 50,000 are in use at present.

CHILE

At Valparaíso there is only a limited demand for marine engines and accessories, and only one agent carries a stock. Two of these engines he has had in his store for the last three years. There are no navigable rivers and no nearby coast resorts offering cruising opportunity. Deep-sea fishing lacks interest for the sportsman.

Due to the high cost of Diesel engines, purchases are confined to the less expensive gasoline engines of small horsepower, and as the average cost of gas is 42½ cents per gallon, the buying of engines is restricted to a minimum.

(Continued on page 120)

"CRUISEABOUT"

The Hit of the Motor Boat Show

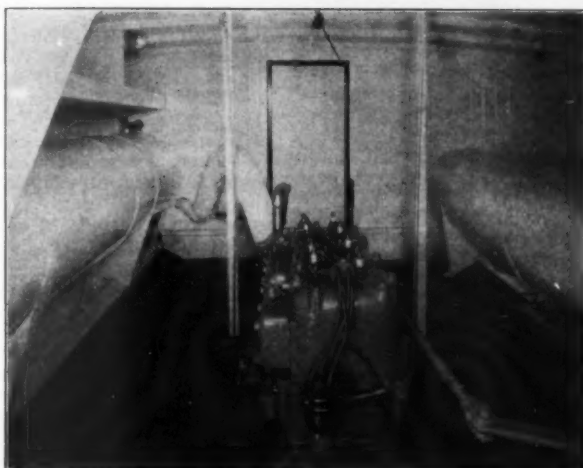
JUDGING by its reception at the New York Motor Boat Show, by the interest expressed and the orders actually placed, CRUISEABOUT apparently meets the popular ideal of a medium size standardized cruiser. And there is little wonder about that, for it is the first stock boat of its size ever produced by a well known quality builder with a long established reputation for the highest class of yacht work.



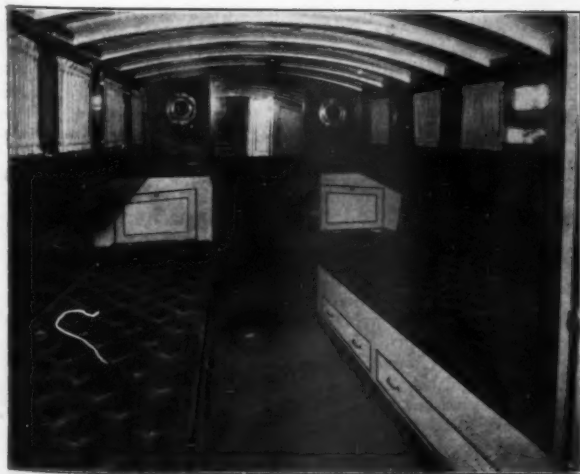
In the forward cabin, looking toward the galley. Upper and lower berths on each side sleep four. Notice also the folding mahogany table fastened to the ceiling in the upper righthand corner.

CRUISEABOUT is a bridge-deck double cabin cruiser, 38 feet over all, 10 foot beam and 3 foot draft. It is arranged for one man control and sleeps six below decks, with the privacy of two cabins, or seven counting a pipe berth in the big engine room. The speed is better than ten miles per hour, driven by the 35-50 H. P. Kermath.

The self-starting Kermath 35-50 gives ample power for more than 10 miles per hour. This engine room is amidships immediately beneath the bridge deck.



This boat is built throughout by the Robert Jacob yard at City Island, which has been building fine boats to order for nearly a quarter century. The Jacob organization knows only one class of construction and workmanship — the best. They will not build a boat that does not embody the finest materials and finish, and their long experience in the highest grade of work is evident in every detail of the CRUISEABOUT.



The after cabin is as roomy and as beautifully furnished as the stateroom of a 70 footer. The panels are finished in two tones of gray enamel with mahogany beading. All the rest is mahogany, with silk curtained windows.

The boat is absolutely complete in accommodations and equipment. Electric lighted throughout and furnished with excellent fittings and upholstery. Two toilets, ample locker space, full headroom, brass hardware, etc. You will see many differences between the Cruiseabout and other medium size stock boat when you inspect this boat. We invite you to visit our plant and see the boats finished and under construction.

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The Boat & Engine Market Abroad

(Continued from Page 118)

MOTORBOATS.—Could never be profitably imported, it was reported by W. E. Embry, assistant trade commissioner at Santiago, being automatically barred by excessive freight and customs costs. All motorboats used in the Bay of Valparaiso are of local build. No one has yet been able to convince interests operating the numerous lighters used for transshipping cargoes that it would prove profitable to use launches equipped with Diesel engines for towing instead of employing steam tugs, small hired launches, or lighters propelled by hand, as at present.

Launches equipped with Diesel engines of as much as 35 h. p., and burning crude oil, have never been seen at that port. It appears, it was reported, that if such a launch were constructed and its capacity for work demonstrated to lighter owners, with the low cost of operation being particularly stressed, at least several of this type would be sold without difficulty. There are at present about forty motorboats in the bay, the majority equipped with American gas engines of about 5 to 15 h. p. A German motor of 6 h. p. is sold there for about \$380. No stock or spare parts are carried by agents.

OUTBOARD MOTORS.—May meet with fair sale in the lake region centering about Valdivia, where one popular American make especially meets with favor. However, several years ago a craze for these small machines started and the demand was soon met by a number of American manufacturers.

THE PHILIPPINES

"The three thousand islands of the Philippine Group are a growing market for marine engines, and will be a very important one when the present political unsettlement abates and a period of normal business can be foreseen. Marine transportation is necessarily an important factor in intercommunication, and already a fleet of small motor freight boats operating out of Cebu has taken a great deal of trade to that place.

"This is a field that the marine-engine builders should consider seriously in their plans for future marketing of their products," wrote John A. Fowler, trade commissioner at Manila, "as it is composed of thousands of islands and a mainland where water is the principal avenue for the movement of freight. On the other hand, the cost of labor is low, which will certainly retard the development of this trade."

Gasoline is very expensive and not so easily obtained as kerosene, which can be bought at almost any village; but gas is only available where there are motor routes. However, in these islands the American motor is practically supreme. This colony has been taught expensive habits and the high cost of operation is not so strong a factor against the sale of the American engine as elsewhere in islands of the Pacific. An economically operated engine, such as a kerosene burner up to 15 h. p., started on gasoline or with a blowtorch, would have the advantage in the trade.

MOTORBOATS.—The growth of the use of motorboats in the Philippines has been considerable in recent years. However, they are little used for pleasure, as vacationists take to the hills for a breath of cool air whenever they get a chance to leave the coast. High-speed engines are therefore little in demand. As there is considerable local skill in making boats suitable to the pecuniary needs of the various rivers and harbors, and as the various woods of the islands are highly suited to boat building, little market for motorboats is seen yet.

Fishermen have not yet taken interest in motorboats and cargo is usually handled in oar-propelled lighters. For emergencies in towing almost every inter-island steamer and coastwise vessel has a motorboat. There is a big possibility in developing the use of motor-propelled freight boats, or freight-boat tenders, in the ports.

OUTBOARD MOTORS.—Prospects show little development in this line for the time, mostly because pleasure boating is little known. Machinery houses of the first class are averse to taking agencies for outboards for the reason that

the original sales are in small money units and the spare part business is considered a nuisance.

CUBA

The business depression since 1920 is still felt in Cuba and the market for light marine motors is unfavorable at present, according to Sterling R. March, of the trade commissioner's office at Havana. Due to greatly increased use several years ago and consequent imports, there are now more heavy-duty engines for lightering work than needed. The open sea separates the ports and comparatively few launches ply between them. However, 90 per cent of the light engines in use are of American manufacture, and there may be a market developed in time for the light types.

The preference for low-priced engines and the difficulty of selling high-priced ones arises from the fact that their principal market is among launchmen who carry passengers for their living. The number of expensive engines for pleasure use is small in comparison. Engines for the Cuba trade must be equipped for salt-water use.

MOTORBOATS.—Are made locally and there seems to be slight market just at present for American or other foreign makes. Native woods are used in construction.

ACCESSORIES.—Equipment and spare parts have no present market.

JAVA, SUMATRA, SIAM, CHINA, INDO-CHINA, JAPAN AND MALAYA

From the trade commissioner at Manila, who is familiar with conditions generally in the islands of his section of the world, comes word concerning an important market. He believes there is going to be a large development in the use of the motorboat all through that southern territory. He reported there should be a good market in Japan (although this report was written before the recent disaster). Trade in motorboats had increased enormously there in recent years. There is also room for further growth in the trade in China, where also, the increased use of motor cars has educated the people in the use and repair of engines.

A unique suggestion for gathering in the market among the many important islands thereabouts is made. It was said that the best method of building up and keeping a marine engine trade in Java, Celebes, Siam, Sumatra, the other Dutch Islands and Malaya, is for an American house to put a permanent representative in the field to establish agencies and keep agents up to their best efforts by periodic visits. Until that is done there will be little American trade developed either in British Malaya or the Netherlands Islands. But this may be something no one firm could or would do.

However, it was added, if manufacturers of a range of engines, including small Diesels, would unite their efforts to sell engines in this territory and would bear the proportionate expenses for a resident engineer, it would not only develop a large business but would have a very advantageous position for its maintenance in competition with European motors.

In Sumatra motor tenders are used by the fishing fleets to some extent. Transportation on that island is very largely on rivers, and the same is true of Borneo. Machinery houses in Java are said to be loaded with European makes of engines, and agents say American motors are not suited to compete with the former because the American manufacturers have directed their attention to factors other than economical operation, which has been the main aim of the Europeans. In Celebes conditions are comparable with Java, as rivers are short and but little navigable, but there should be a growing business there, just as there is in the latter island.

There seems also to be a good market opening for engines in Siam, though it would be small in the beginning and would have to be built up. In French Indo-China the tariff and temperament of the French will, it is believed, continue to act as an effective barrier against the sale of American engines in any considerable quantities.



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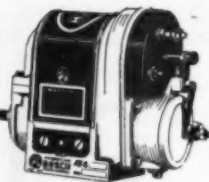
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An Arctic Bluenose

(Continued from page 29)

duces; though they cannot read or write, the Eskimos can sail a boat with any man, and they are not afraid of anything in the shape of weather—which in the Arctic means biting gales of wind with ice floes dancing and a lee shore minus maps, light-houses or any other aids to navigation. They know a good vessel too, and the prairie built schooners are of the staunchest variety with oak ribs and yellow cedar planking; bolts instead of nails are demanded by the Arctic sailormen, and the vessel will not be accepted by the native son until he has satisfied himself that the barometer and compass are in place, that her sails fit, and that the usual auxiliary engine works, and has a plenitude of spare parts, batteries and so on. Many white fox skins Amatik pays for his schooner, and he demands value for his money. The first Eskimo sailors learned their navigating from the American whalers who annually forced their way into the Canadian Arctic via the Behring Straits. The Eskimos gladly shipped aboard for a whale hunt; their pay consisted of presents, and one native became the possessor of an open whale boat which is the father of the forty or more schooners now owned by the Eskimos on the Canadian side of the furthest north international boundary. Traders to the Far North visualized the opportunity of selling watercraft to the hardy coast dwellers; the Northern Trading Company of Edmonton shipped in a sample schooner, which nearly resulted in a tribal war for the possession of the vessel, and ever since yearly a flotilla goes north.

With the arrival of the steamer Northland Trader at the Arctic coast after the ice had gone out of the Mackenzie River, Eskimos from all over the seaboard gather at Aklavik to trade their furs, pay over the white fox skins, order new schooners, and learn from the white men such fragmentary news of the outside world as may appeal to them. There is much rivalry between the crews of the various steamers, motor vessels and schooners which ply to the Arctic coast via the Athabasca, Slave and Mackenzie rivers; every voyage is enlivened with tales of maritime records and here as well as elsewhere there is much discussion of the various craft which raced for the Fishermen's trophy, the Canadians stoutly maintaining that Bluenose was a winner from the first gun, while far-from-home Americans are loath to let it go at that and are willing to accept any wager that next season Henry Ford will show the Nova Scotian a clean pair of heels.

Last season, with the arrival of the first boats the discussion was still in full swing, and it was finally brought home to the waiting Eskimos that the white men talked of a great boat race somewhere in the mysterious outside, and as racing is the one thing the Eskimo enjoys next to blubber eating they were all attention. Around the men who perched on the gunwales of the Northland Trader clustered the Eskimos eagerly listening but saying little as is their wont. Presently they trooped ashore, and as the steamermen loafed after supper it was apparent that something was afoot, the natives from all the summer bark and sod huts flocking to the chief's dwelling, outside of which a vigorous pow-wow was in progress.

The sequel came in the morning, when Innitok, Pougik, and Amatik bringing their fur bales down to the steamer, gave their orders for next year's schooners. Innitok, who had previously purchased three vessels from the Northern Trading Company announced that he required a fourth and in mixture of broken English, Eskimo, and Portuguese (picked up from the whalers) stated that he wanted a very fast schooner—a boat that could out sail any other craft in the Arctic and carrying a white man's name.

Laughingly one of the men said "Oh, I know what you're after, Innitok, you want to own the Bluenose of the Arctic, and to his astonishment the Eskimo replied "Yes, yes—big schooner—fast ship—same name white man's ship like you talk—race other fellows—very quick—bring much fur to pay—I buy three schooners already—want big, fast ship," and thus it came about that with her name proudly painted on stem and stern the new Bluenose goes north this spring.

"Bluenose nothing," said an un-grammatical, but patriotic Yankee, "what you want is the Henry Ford—she's going to win this year," but to this suggestion Innitok was deaf, and sure of obtaining a champion schooner carrying a champion name he retired to his present vessel well content in the knowledge that next season he will be an Arctic celebrity. "Well, anyhow the Henry Ford and the Mayflower have got to tag along too," said the patriotic one from south of the line, and presently when Amatik and Pougik came along with the verbal orders for their boats, the Yank announced "Look here, you two, your boats are going to be called white men's names—big boats—fast boats—beat Innitok's schooner—how's that?" to which plan the huskies gave delighted consent, and furthermore announced that the next open season in the Arctic that the American challengers would give Bluenose the run of her life from the Alaskan boundary to the Pole if agreeable.

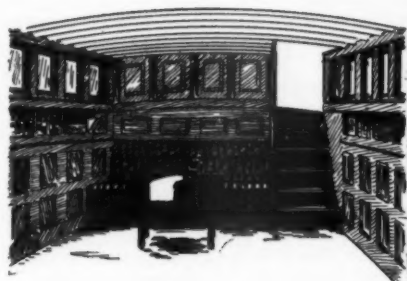
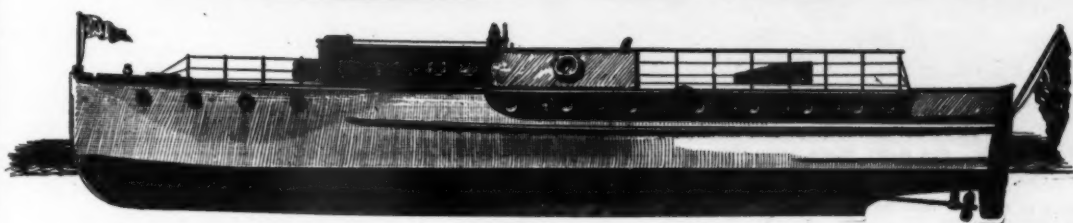
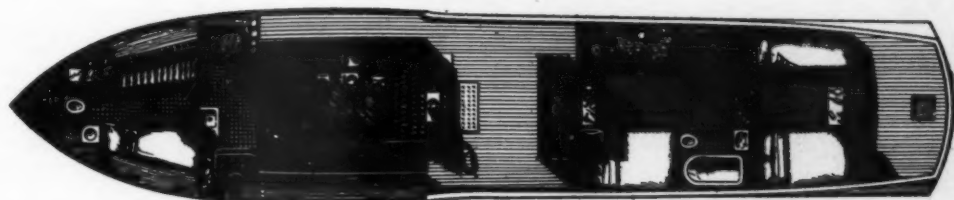


Albany
BOATS

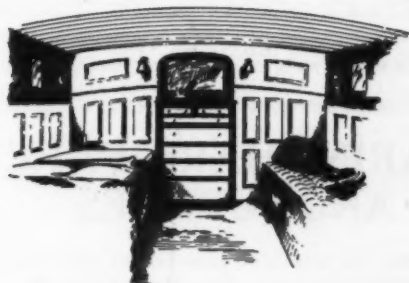
"ARE SMART BOATS"
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Design
1030

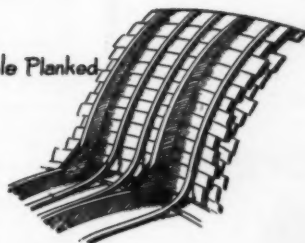


Saloon

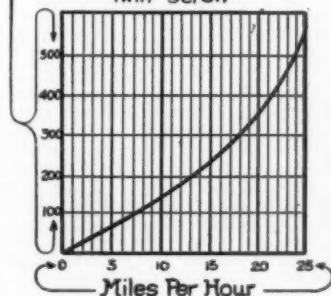


Staterooms

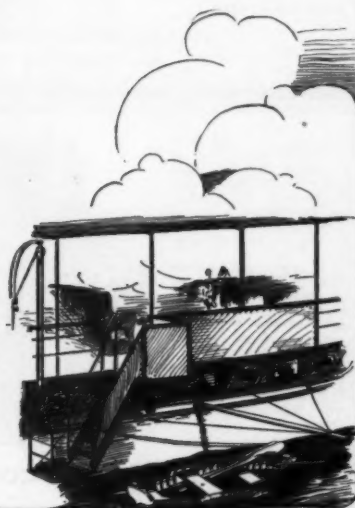
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This COMET LIGHTING UNIT is so easily installed that it does not require any mechanical or electrical experience. Can be had to furnish 6 volt or 12 volt current.

Ordinary automobile lamp bulbs and fittings are used.

The unit shown will light twelve 4 candle-power or four 15 candle-power lamps.

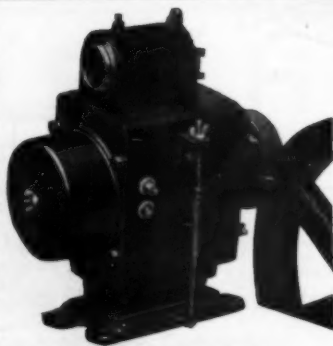
We can furnish units of greater capacity; also with belt drive, and separate switch-boards.

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COMET ELECTRIC COMPANY

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Rosita, A 21-Foot Racer

(Continued from page 112)

will be a regulation water intake fitted with a globe valve and a hose connection to the motor. The over flow to have a special fitting and elbow inside with a nipple and a hose connection to the motor. All gasoline piping to be of $\frac{3}{8}$ -inch annealed copper tubing, with supply to the vacuum tank and supply to the carburetor from the tank. There should be a valve next to the carburetor. The S. A. E. type standard tubing connections are recommended. Tubing is to be properly cleated to insure safety. Wiring to be properly made according to instructions furnished by the motor manufacturer, and to be well cleated, accessible, and concealed as much as possible. Engine controls are to be carried to the steering wheel. The electric starting switch is to be mounted above the foot rest, so as to be readily operated. All work on the installation is to be done in first class manner in every respect.

General: All necessary equipment such as running lights, anchors, lines, fog horn, fire extinguisher, cushions, linoleum, etc., have not been included, but should be specified or furnished by the owner. Oil or electric lights may be used, and if they are to be electric, the Hacker type are suggested including a combination post light. The after flag pole should combine with a light also. A 15 pound stockless or folding anchor is suggested with a $\frac{1}{2}$ -inch manila line. Painters should be $\frac{1}{2}$ -inch line. An electric motor driven horn should be mounted under the clam ventilator. Cushions to be of mule skin material, kapoc filled. Supply a paddle and boat hook. The battle ship type linoleum for the floors to be of 3/16 inch thickness.

Lighting System for Small Boats

(Continued from page 38)

In a small cruiser there could be a 21 or 32 candle power lamp in the cabin and two or three 4cp. lamps. The side lights can be white bulbs mounted in an old oil light. These could be 4 or 15 cp. or larger if desired. The search light can be a regular automobile spot light which is very easy to mount and throws a very powerful beam, with a 32 cp. lamp. Spotlights range in price from \$5.00 to \$15.00. A system with 32 cp. search light, 21 cp. cabin light, two 4 cp. cabin lights, two 4 cp. side lights can all be carried very easily on one, 6 volt, 11 plate battery. If more lights are desired, it is well to have two batteries connected in parallel as shown in sketch.

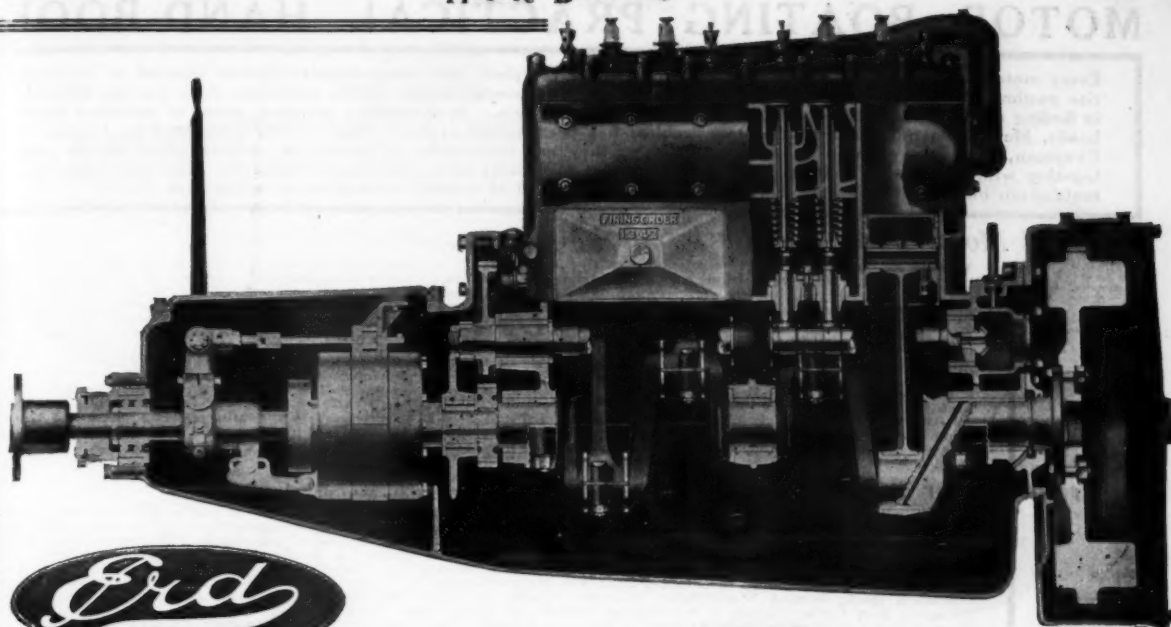
The lights can be controlled from a small, multiple gang lighting switch, obtainable from an auto supply store for about 40 cents per gang. That is, a 3 gang switch would be \$1.20. The switch can be placed in the cabin or on the bulkhead, as the owner chooses.

The most important thing is the generator, cutout and ammeter. These parts can be obtained from Ford parts department at the following prices. Generator \$17.00, cutout \$1.00, and ammeter 80 cents. The generator must be fastened rigidly in such a position that it can be driven from the engine. There are numerous ways of doing this and it is controlled by the design of each individual engine. One method where the flywheel of the engine is suitable, is to drive it by friction. The speed of the generator must be about 1,500 rpm. to deliver about 10 to 15 amperes. It should never run over 2,500 rpm. This must be experimented with until the proper charge is obtained. The third brush of the generator is movable and adjusts the charging rate. The sketch shows a method of mounting the generator on a bracket of cold rolled steel about $\frac{1}{4}$ -inch thick. Slots are placed at two of the bolt holes for adjusting the pressure against the flywheel. The bracket is bolted to the side of the engine bed with the generator mounted so that the friction pulley will come in contact with the flywheel.

The friction wheel must be figured first for diameter. For instance, if the flywheel is 15 inches in diameter and runs 500 rpm. the friction wheel must be from 3 to 5 inches in diameter to get a speed of 1,500 to 2,500 rpm. It is very simple to make the wheel as shown on the sketch. The friction material is either leather or heavy rubber placed between two steel discs. The discs should be about $\frac{1}{2}$ inch less in diameter than the friction material. This friction wheel is put on the generator shaft in place of the regular gear. The cutout is mounted on the generator in the regular manner. The wiring should all be not less than No. 14 rubber covered copper wire, the same as used for house wiring. A diagram of a wiring system is shown in the sketch, with the extra parallel battery in dotted lines.

P. W. C., Indianapolis, Ind.

Advertising Index will be found on page 130



20-35 H.P.

THE LOG OF THE ERD

Motor $3\frac{3}{8}$ x 5, four cylinders.
Three bearing chrome-nickel steel
Crankshaft.

Total main bearing length, $8\frac{1}{2}$ ".

Connecting rod bearings, 2" x 2"—
Unusual for this size motor.

End play adjustment on crankshaft—
The only marine motor so equipped.

Lubrication—Full force feed system
by internal gear pump through
HOLLOW CAMSHAFT and
drilled crankshaft, to all bearings.

Main bearings, connecting rod bear-
ings, and even Camshaft bearings.
bronze back, nickel babbitt lined type.

Main bearing studs, connecting rod
bolts, even cylinder head studs,
nickel steel, heat treated.

Hollow valve tappets, easily remov-
able without disturbing valves.

Valves of nickel steel alloy.

Bronze gear water pump with salt
water fittings throughout.

Paragon reverse gear. Nickel steel
shaft running on double row annu-
lar and thrust ball bearing.

Cleverly designed hot spot manifold.

Unbelievable power. More than 22½
h. p. at 1000 R. P. M., 35 h. p. at 1600
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The Inevitable!

It simply had to be—with all the different makes of Marine Motors on the market, it remained for ERD to come to the front with the outstanding accomplishment of 1924.

In business since 1898, the name ERD is known to motor boat owners the world over, and when ERD makes the statement that their new 20 to 35 horsepower motor has features never before offered to the marine engine trade, outside of the very highest priced engines, that statement carries the conviction of twenty-six years of experience and knowing how.

It is a Motor of proven ability, and of tremendous power. In producing this engine ERD has accomplished results in eliminat-
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Cast your weather eye on the features listed in the Port column and you will understand why ERD's claim for outstanding accom-
plishment is justified.

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8-4 Unit Power Plant with Electric Starter, Generator, Distributor, Coil and Cut-out, Instrument Panel with Ammeter, Switch, Dash Light, Oil Pressure Gauge, Willard 6-volt Battery, Packard High Tension Cables, Champion Spark Plugs, Carburetor, Priming Cups, Starting Crank and Coupling \$875.00

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MOTOR BOATING PRACTICAL HAND-BOOKS

Every motor boatman has long felt the need for a really complete and comprehensive library devoted to his favorite pastime—motor boating. One of the obstacles to the accomplishment of this important work was the difficulty in finding any one writer who could cover the field in its entirety. In presenting the new series of practical hand-books, MoToR BoatinG believes that the problem has been solved at last. These books are edited by Charles F. Chapman, M. E., the editor of MoToR BoatinG, and they are the results of months of untiring effort on his part, together with the best of thousands of suggestions sent to him by motor boatmen themselves. The list of the contents given below will give you some idea of the vast amount of ground covered by these volumes.

Practical Motor Boats and Their Equipment

Volume 1.—The first volume tells you what the ideal boat for various kinds of service should be and what to look for in buying a boat. Many suggestions about decoration and hints on all kinds of equipment. All about steering gears, wireless outfit, electrical attachments, etc. Glance over the list of contents appended herewith: Hulls, Ballast and Seaworthiness; Round Bottom vs. Sharp Bilge; What Are the Advantages of Plank; Raised Deck vs. Trunk Cabin; Best Proportion of Beam to Length; Selecting a New Design; The Advantage of Bilge Keels; Open or Solid Deadwood? What Makes a Hull Seaworthy? The \$1,000 Cruiser; Buying a Second-Hand Boat; Types of Bows and Sterns; Exterior Arrangement of Cruisers; The Best Cabin Arrangement; Finishing Up the Cabin; Changes in Interior Arrangement; Interior Arrangement for Open Boat; Propeller-Rudder Arrangements; Best Position for the Rudder; Advantages of the Outboard Rudder; Different Steering Positions; Steering Equipments for Motor Boats; Steering Gear for the Cruiser; The Steering Gear for a Runabout; Steering the Boat from the Side; The Electrical Equipment; Making and Wiring a Switchboard; Electric Lighting on a Motor Boat; The Inexpensive Lighting Outfit; Wiring the Small Cruiser; The Storage Battery; The Dynamo Cut-Out; Wireless for a Small Cruiser; Tender for a Thirty-foot Cruiser; Building a Folding Dinghy; Installing the Boat Boom; What is the Best Galley Arrangement; Ventilating the Galley; The Galley Stove and Its Installation; Making a Fireless Cooker; A Portable Cook Box; Running Water for the Cruiser; How to Build a Portable Table; A Table for the Open Boat.

Practical Motor Boat Building

Volume 2.—As its title implies, this volume takes up the building of your own boat. It also covers the construction of the necessary fittings such as awning, windshield, etc. Every boatman some time or other builds a boat, and a book of this kind will save much time and prevent many mistakes. List of contents: Types of Motor Boat Fastenings; Boat Building Woods; Laying Down a Boat's Lines; Converting a Trunk-Cabin Cruiser; A Steam Box for Amateur Builders; Joiner Between Stem and Keel; Fastening the Frames and Floors; Boring the Forgotten Limbers; Fitting the Garboard Plank; Boring the Shaftlog; Fitting the Stuffing Box; The Stern Bearings for a Cruiser; A Water-Tight Companionway; How to Canvas a Deck; Hinged Water-Tight Hatches; Making a Water-Tight Hatch; The Coaming of an Open Boat; Fitting a Swinging Port Light; Making a Self-Bailing Cockpit; A Water-Tight Window Sash; Making a Water-Tight Skylight; How to Build an Engine Housing; How to Make an Engine Cover; Building a Tool Locker; Constructing an Extension Transom; How to Make a Pipe Berth; An Ice Box for a Cruiser; Installing a Toilet; How to Rig a Signal Mast; How to Make a Spray Hood; Fitting a Folding Windshield; An Awning for the Open Boat; A Cover for the Open Cockpit; Screen for the Side Light; A Support for the After Light; A Seat for the Man at the Wheel; Removable Davits for the Cruiser; The Boarding Steps; A Bow Rudder for Your Hydro; The Motor-Driven Club Tender.

Practical Things Motor Boatmen Should Know

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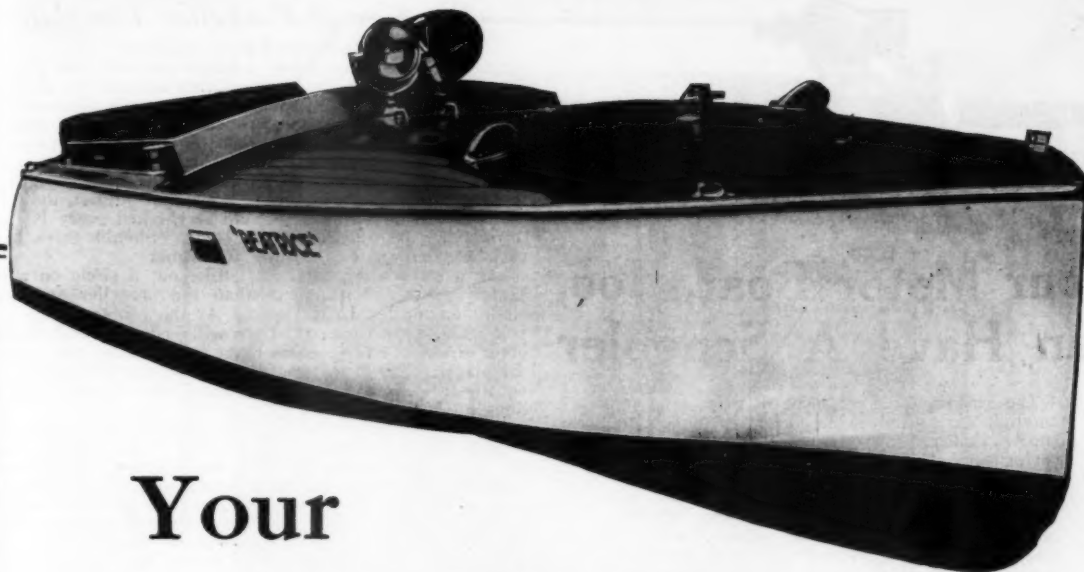
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The Use of Propeller Templates

(Continued from page 36)

battens. Sharpen the end of a batten and with any blade in a horizontal position, bring the batten against the driving or after face of the blade so that it touches both edges and force the batten into the ground just enough so that it won't slip. Then place a short batten against the shaft or propeller hub; preferably the shaft, and clamps it in position so that the testing jig may be moved and replaced in the same position. By turning each blade to the same horizontal position the pitch is easily checked. The pitch should be checked every 1½ inches throughout the length of the blade. Should there be any variance, remove the propeller for truing.

For a more accurate check, strike out a circle on a board slightly smaller in diameter than the propeller and smaller circles about 1½ inches apart. At the center set up a perpendicular over which the bore will just slide and divide the outer circle into three equal parts for checking the spacing of the blades. The diameter of a circle divides the circumference equally into six parts, so take every other division and draw lines to the center.

Place the propeller driving face down on the perpendicular with a few washers or a block bored to go over the upright under the hub. Beginning at the circle nearest the hub make a thin wooden template or pitch board to fit the driving face at right angles to a diameter, and fasten it to the board with brads or screws. The templates will be triangular in shape with one curved edge and a little blue rubbed on the wheel will help in fitting them. Proceed in like manner at each succeeding circle until you have a set of templates which exactly fits the contour of the driving face of the blade.

Mark the outline of the blade on the templates, and raising the propeller turn another blade over the templates. If true the blade outlines should coincide and the driving face fit the templates exactly. Where two blades check up on the templates but not the third you can be sure that it is the blade which is out.

When no two blades check it will be necessary to find the pitch angle at the circles where the check is off and make templates having the correct pitch.

To find the pitch angle lay off a straight line equal in length to the circumference of the propeller circle which equals 3,1416 times diameter. At the end of and at right angles to this line erect a perpendicular representing the pitch of the propeller in inches. A line connecting the ends of these two lines will form an angle with the horizontal equal to the pitch angle of the blade at the tip. The diameter and pitch is generally stamped on the hub, and the circumference of the inner circles can be calculated from their measured diameters, but the angle will be different for each position.

This gives the pitch angle but not the contour of the face of the blade. For the contour you will have to use your eye, fairing up the curves both ways of the blade and you will not be far off from the original shape.

The diameter of a propeller is easily measured by doubling the distance from the center to the end of a blade but you can not measure the pitch directly from the blade. However, the pitch is easily calculated from a few simple measurements. One of the simplest and most accurate methods in inexperienced hands is to place the propeller, driving face down, on a plane surface and with a 45 degree drafting triangle he'd squarely across the blade, move it along, until a spot is found where both edges of the blade touch the triangle. Measure the distance from the center of the bore to the triangle and multiply it by 6.14. The result will be the pitch. By using a 30 degree triangle and 3.62 as a multiplier you can check the calculations.

Where all blades are found to vary construct the triangle to find the pitch angle at each station and work the nearest blade so that its edges fit the templates and fair up the contour. Then remove these templates and make others to fit the contour and fasten them so that they will not shift. Work the remaining blades to the templates and the propeller will be true to pitch, all blades being alike if not exactly as originally and results will be satisfactory.

To equalize the blade area, mark on the templates around each blade to find the smallest. Smooth and fair up the edges of this blade, erase all marks and mark around the fairer blade. Then file the other blades to the marks. In some cases a paper pattern pasted to the driving face to work to may help.

To balance the propeller, fit a short shaft to the bore and roll it between two perfectly level steel straight edges, or place it between easy running centers. Spin the wheel and as it dies note which blade swings back to the bottom. The blades must be filed until any blade will rest at the bottom or in any other position. It may be necessary to file two or all blades to get a perfect balance. In filing the blades remove metal only from the back and at the edges, if possible.

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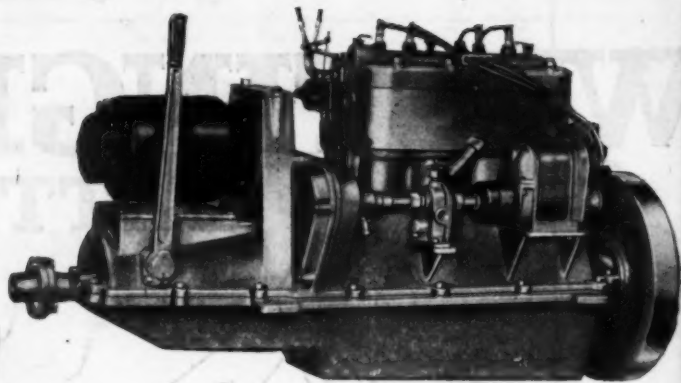
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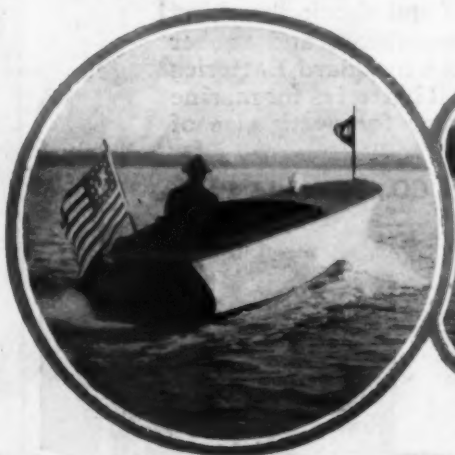
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Two more views of the Fay & Bowen 20-ft. Runabout.

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